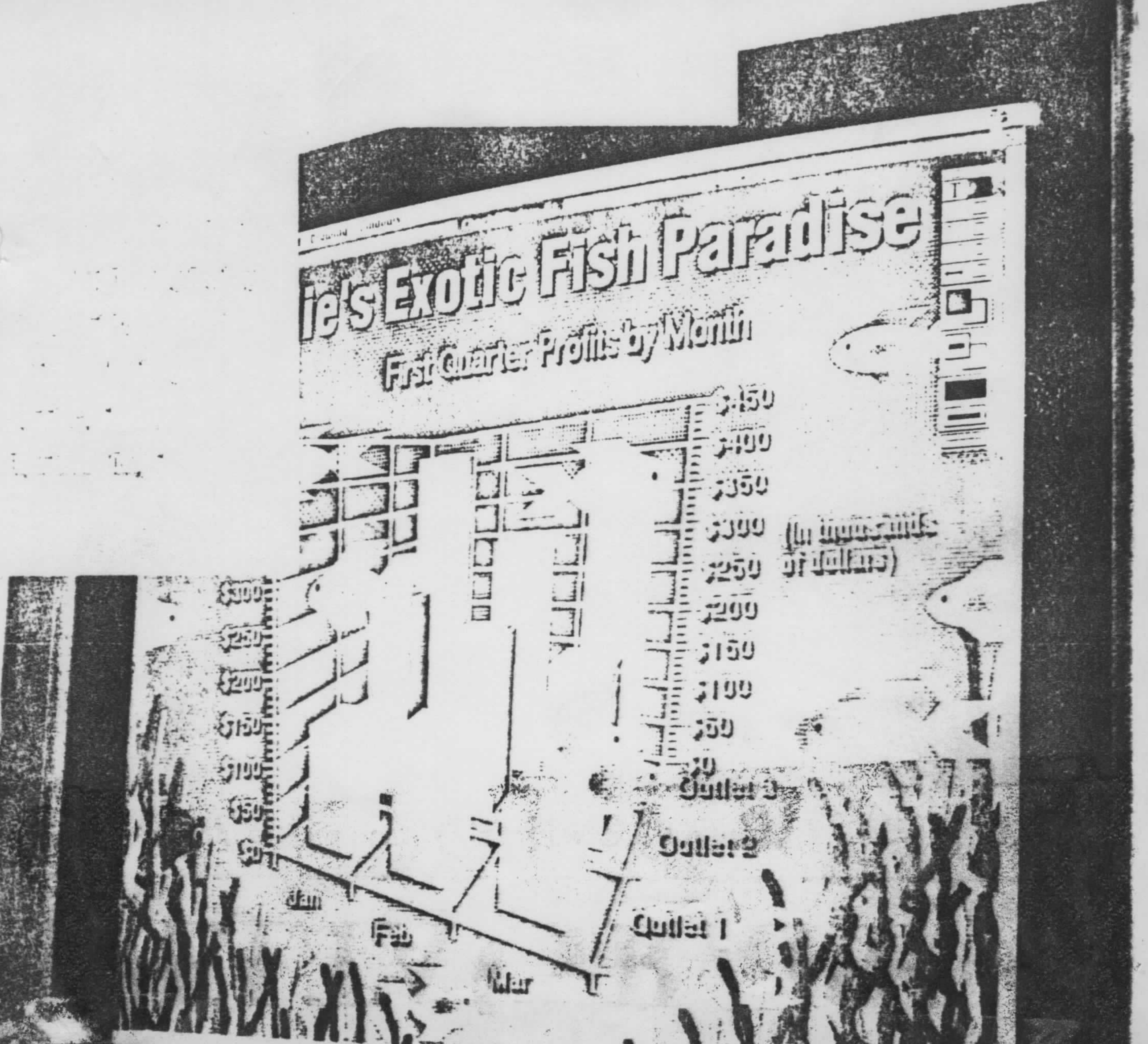
DeltaGraph

The Ultimate Charting and Graphics Solution



ELTAPOINT, INC

DELTAGRAPH

THE ULTIMATE CHARTING SOLUTION

DELTAPOINT, INC. • 200 HERITAGE HARBOR, SUITE G • MONTEREY, CA 93940 • (408) 648-4000

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DeltaPoint, Inc.
200 Heritage Harbor, Suite G
Monterey, CA 93940
(408) 648-4000

Acknowledgments

DeltaGraph™ was written by **The SU-5 Group** — Andrew Wulf, Ken Clark, John Hopkins, and Darlene Hopkins — with assistance from Bill Pryor and Cary Wyman.

Concept and Design: Mark Kaufmann, Ray Kingman, and the SU-5 Group.

Quality Assurance: Mary Martin and Kevin Norris.

Documentation: Meryle Sachs, Leslie Simon, John Mason, and Susan Raab, with assistance from John Hopkins and Mark Kaufmann.

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Welcome to DELTAGRAPH

DELTAGRAPH™ is an advanced charting and graphics package for your Apple® Macintosh® computer. DELTAGRAPH is designed to make it easy for you to translate complex data into eye-catching charts and graphs that will be read and remembered.

Whether you need charts to present your yearly budget to the corporate office, or to explain highly technical scientific data, DELTAGRAPH can help you do it faster and more effectively, with the highest quality output available.

DELTAGRAPH features a full complement of 22 chart types, including seven three-dimensional charts. You have complete formatting control over every chart element. DELTAGRAPH provides a complete set of drawing tools, full color support, powerful data-handling functions, and high-resolution color and PostScript® output.

You can import data from almost any file format, including Excel® 2.2, SYLK, WKS, Trapeze, and Tab- and Comma-delimited text. You can import both EPSF (Encapsulated PostScript Files) and PICT graphics to enhance your charts. You can export your charts and graphics in EPSF, PICT, and Adobe Illustrator™ formats.

DELTAGRAPH lets you print to both QuickDraw™ and PostScript devices, giving you a wide choice of printers, plotters, and film recorders on which to produce your final chart documents.

What You Need

To use DELTAGRAPH you need an Apple Macintosh Plus, SE, or II, with System software 6.0.2 or higher. While DELTAGRAPH will run on a system with two 800K disk drives, a hard disk or other large-capacity storage device is strongly recommended.

If you plan to take advantage of DELTAGRAPH's three-dimensional charting capabilities, a Macintosh with a 68020 or 68030 processor, and accompanying math co-processors (Motorola® 68881 and 68882 processors), is also recommended.

You should be familiar with basic Macintosh operations, such as working with documents, windows, menus, dialogs, and the mouse. If you are not familiar with these operations, please refer to your Apple Macintosh User's Guide.

How to Use this Manual

The *DeltaGraph User Guide* is designed to help you learn and use DELTAGRAPH. The first chapter teaches you the basics of DELTAGRAPH through a step-by-step tutorial that shows you how to make charts. The remaining chapters contain conceptual information, step-by-step instructions for using all of DELTAGRAPH's features, and a complete reference of menus and commands.

Use the instructions in Chapter 1, "Getting Started," to install DELTAGRAPH on your system. Then follow the tutorial to acquaint yourself with the basic operations of DELTAGRAPH. The first part of the tutorial tells you how to enter your own data and build a three-dimensional column chart. The second part of the tutorial shows you how to import data and create a line chart. The tutorial also shows you how to work with some of the dialogs and drawing tools in DELTAGRAPH.

Read Chapter 2, "DELTAGRAPH Concepts," for a description of basic chart elements and terms, plus an overview of DELTAGRAPH windows and tools. This chapter gives power users a quick introduction to how DELTAGRAPH works.

Refer to Chapter 3, "Working with Data," when you need instructions for entering, editing, importing, exporting, manipulating, and printing data.

Chapter 4, "Plotting Data," tells you how to plot your data and gives a pictorial example of each type of chart you can make with DELTAGRAPH. The charts are designed to illustrate some of the many and varied effects you can produce with DELTAGRAPH.

To enhance your charts, refer to Chapter 5, "Editing Your Chart," for instructions on using DELTAGRAPH menus, dialogs, and tools to add patterns, colors, special fills, custom colors, and text variations to all the elements of a chart. This chapter also explains how to work with axes, grids, tick marks, labels, and symbols in two- and three-dimensional charts.

Chapter 6, "Drawing in the Chart Window," tells you how to use all of the drawing tools and the Drawing menu to add colorful graphics to your chart.

Chapter 7, "Importing and Exporting Graphics," describes how to use the Import and Export commands, and which graphic file formats you can use.

Chapter 8, "Printing Charts," tells you how to print your documents using standard and non-standard printers.

Chapter 9, "Menus and Commands," is a reference describing each DELTAGRAPH menu and command in the order in which it appears in the menu bar.

The appendices contain Command-key equivalents for menu commands, and some basic graphing design hints.

Chapter 1 Getting Started

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1 Getting Started

This chapter tells you how to install DELTAGRAPH, then takes you through a tutorial to help you learn basic DELTAGRAPH operations. The tutorial shows you how to enter data and create a three-dimensional Column chart, and how to import data into DELTAGRAPH and create a two-dimensional Line chart.

Before you install DELTAGRAPH, make copies of your DELTAGRAPH disks and store the originals in a safe place, so that you can make another backup if the first becomes damaged. It is also a good idea to lock your distribution disks before copying them.

If you do not know how to lock and copy disks, see your Apple Macintosh user's guide for instructions.

Remember that DELTAGRAPH is copyrighted and that your copy has a unique serial number. It is illegal for you to copy DELTAGRAPH except for your own use.

Installing DELTAGRAPH

This section tells you about the DELTAGRAPH distribution disks, how to install DELTAGRAPH on hard and floppy disk systems, and how to use a special document called "DG Stationery" for setting your startup environment.

About DELTAGRAPH folders and documents

DELTAGRAPH is distributed on two disks:

- Program disk

  The Program disk contains the DELTAGRAPH application.

- Utilities disk

  The Utilities disk contains the folders and documents described in Table 1-1.

Table 1-1. DeltaGraph Folders and Documents

Document/Folder Name	Description
Release Notes	A text file containing any information about the current version of DeltaGraph that is not included in the *DeltaGraph User Guide*. You can read this document with any word processor application.
DeltaGraph.Help	A document containing the DeltaGraph context-sensitive, on-line Help system. Must be in System folder or same folder as DeltaGraph application to be accessible.
DeltaGraph Library	A document containing custom chart formats. Must be in same folder as DeltaGraph application to be accessible.
DeltaGraphMacro	An Excel macro document that enables you to load data from Excel 2.2 into DeltaGraph automatically.
Sample.XL	An Excel 2.2 document you use to practice importing data in the second part of the tutorial.
DG Stationery	A document you can use to create and store customized startup environments for DeltaGraph. Must be in same folder as DeltaGraph application to be accessible for startup.
DeltaGraph Prefs	A document *not on the disk*, but created when you start DeltaGraph. This document is placed in the System folder. It stores default and new settings from the Preferences... command.
Symbol Fonts	A folder containing the screen and PostScript fonts for the special DeltaSymbol font.
Sample Documents	A folder containing sample DeltaGraph documents.

DeltaGraph.Help

DeltaGraph Library

DG Stationery

DeltaGraph Prefs

DeltaSymbol DeltaSym

DeltaGraph document

Installing DELTAGRAPH on a hard disk

To install DELTAGRAPH on your hard disk, start your Macintosh and follow these steps:

1. Insert the DELTAGRAPH Program disk into an 800K (or larger) floppy disk drive.
2. Drag the Program Disk icon onto your hard disk's directory window or onto the Hard Disk icon itself.

   This creates a folder on your hard disk with the same name as the DELTAGRAPH Program disk.

   Alternatively, you can select the DELTAGRAPH icon on the Program disk and copy it into any folder on your hard disk.
3. Eject the DELTAGRAPH Program disk and insert the DELTAGRAPH Utilities disk.
4. Select all of the documents and folders on the Utilities disk and drag them into the folder that contains the DELTAGRAPH application.

Using DELTAGRAPH with two floppy drives

Although a hard disk is recommended for using DELTAGRAPH, you can use it on a system with two 800K (or larger) floppy drives.

After you've made copies of your disks you can reorganize them to make the best use of available disk space.

Because of the size of the DELTAGRAPH application, you will not be able to save files to your Program disk. We recommend placing the DELTAGRAPH application and the "DeltaGraph Library" document on one disk. DeltaGraph Library enables you to use the Custom Chart feature.

If you want to use DELTAGRAPH's on-line Help, you must place the "DeltaGraph.Help" document in the same folder as the DELTAGRAPH application, or on the System disk.

If you want to use the "DG Stationery" document, explained later in this chapter, you must place it in the same folder as the DELTAGRAPH application.

If you want to use the DeltaSymbol font, it must be installed in your System as described in the following section.

You can place any of the other DELTAGRAPH files you need on your System disk.

If you limit the size of the files on your System disk you will be able to save DELTAGRAPH documents to that disk. Alternatively, you can save your files to a third disk, although you might need to do some disk swapping.

About the DeltaSymbol font

DELTAGRAPH includes a proprietary font called "DeltaSymbol" that contains special characters designed for charts that require symbols. The font consists of two parts:

- a screen font called "DeltaSymbol" that is a suitcase font file
- a PostScript version of the font, called "DeltaSym," that can be downloaded into most PostScript output devices

To see the symbols on screen, you must install the screen font into your System file. You can use the following steps to install the screen font with the Font/DA Mover, version 3.8 or higher.

Alternatively, you can install the screen font into a font utility program, such as Suitcase II™ or Master Juggler™, that loads fonts that do not reside in your System file. Refer to the manuals for these applications for instructions.

To install the DeltaSymbol screen font:

1. Open the DELTAGRAPH folder and double-click on the DeltaSymbol suitcase file.

   This launches the Font/DA Mover and shows the available DeltaSymbol font sizes on the left side of the dialog.

2. Click on "Open" on the right side of the "Font/DA Mover" dialog, locate your System file in the System folder, then open it.

   The fonts already residing in your System appear on the right side.

3. Select all of the DeltaSymbol font sizes and copy them to your System file.

4. Click on "Quit" to close the Font/DA Mover.

Note: If you open the DeltaSymbol suitcase and see no fonts, you are using a version of Font/DA Mover that precedes version 3.8.

Before your PostScript printer can print DeltaSymbol symbols, you must place the DeltaSym font file in your System folder, so that it is available for downloading by your printer.

- If you're working on a hard-disk system, simply select the DeltaSym PostScript font file from your DELTAGRAPH folder and drag it into your System folder.
- If you're working on a two-floppy system, simply select the DeltaSym PostScript font file from the DG Utilities disk and drag it into your System folder.

Now, when you print a chart with a symbol in it, the font is automatically downloaded to the printer.

If you use a PostScript output device that downloads fonts manually, follow the device's instruction manual for installation procedures.

There are some PostScript devices that do not download any fonts. In this case you should use symbols from a symbol font that the device can use, such as Zapf Dingbats.

Note: If you use a service bureau to do your PostScript printing, make sure to take a copy of both the screen font and the PostScript font to the printer with you.

About the "DG Stationery" cument

DELTAGRAPH comes with a document called "DG Stationery" that contains a default opening environment for DELTAGRAPH. You can change this document and use it to customize your opening environment.

You can set font attributes, window size, number of pages in the Notebook window, and number of Chart windows. You can also include sample data and charts in your "DG Stationery" document.

To use DG Stationery, it must be in the same folder as the DELTAGRAPH application. Then, whether you start a new document by opening DELTAGRAPH from the Finder, or by choosing the **New** command from the File menu, an untitled copy of DG Stationery opens automatically.

To use DeltaGraph with the "DG Stationery" document:

1. Drag the document "DG Stationery" to the same folder as the DeltaGraph application.
2. Open DeltaGraph from the Finder, or choose the **New** command from the File menu.

   DeltaGraph automatically opens a copy of DG Stationery, with the name "Untitled."
3. Set the font attributes, window size and number of pages in Notebook that you want as defaults.
4. Create any chart windows you want to have automatically opened.
5. Save the document as "DG Stationery" to make a new Stationery document.

Note: You can have only one "DG Stationery" document.

The next time you open DeltaGraph or choose the **New** command, DeltaGraph opens a copy of DG Stationery with the name "Untitled." You can then work in that document as you would any new document.

When DG Stationery is in the same folder as DeltaGraph, you can use the following key combinations to open DeltaGraph without opening the Stationery document:

⌘–Open...	When opening DeltaGraph from the Finder, creates a new Notebook page and untitled document with the standard DeltaGraph defaults, instead of creating a document with your customized DG Stationery defaults. Applies only if DG Stationery is in the DeltaGraph folder.
Option–New	When creating a new document from within DeltaGraph, creates a new Notebook page and untitled document with the standard DeltaGraph defaults, instead of creating a document with your customized DG Stationery defaults. Applies only if DG Stationery is in the DeltaGraph folder.

Making a 3-D Column Chart

This tutorial shows you how to

- open DeltaGraph

- enter labels and data
- plot the data
- change the font attributes of chart text
- change fill patterns on data graphics
- name and save your document

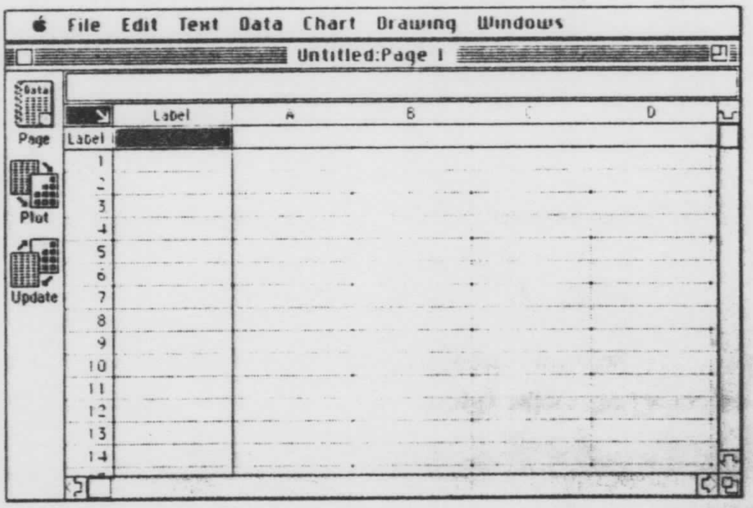
The instructions in the next section assume you have installed DELTAGRAPH as outlined in "Installing DELTAGRAPH" at the beginning of this chapter. Follow the steps to learn how to make a 3-D Column chart in DELTAGRAPH.

Use the tutorial to experiment. Do not worry if your chart looks different from the example charts shown in the tutorial. You might see colors or different shades of gray because of variations in Control Panel settings for the number of colors or shades for color and black-and-white monitors.

Opening DELTAGRAPH

1. **Open DELTAGRAPH by double-clicking on the application or selecting it and choosing the Open command from the File menu.**

   The Notebook window appears on your screen as shown below:



Note the following about the Notebook window:

- The window displays the Menu bar and the usual Macintosh control points for scrolling, sizing, and moving.

- The document name is "Untitled" and appears in the Title bar of the Notebook window. (All documents are called "Untitled" until you name and save them.)
- The Page name, initially called "Page 1," is next to the document name. (The Notebook pages are named because you can use the Page icon in the Notebook window or the **New Page** command in the Data menu to create more than one Notebook page per document, which is useful when you need to organize different data sets in the same document.)
- Three icons appear on the left side of the Notebook window: Page, Plot, and Update. All three icons have equivalent commands in the Data and Chart menus, but are here for added convenience. (See "About the Notebook icons" in Chapter 2 for more information.)
- The insertion point is blinking on the Editing line. This is where you enter data for a selected cell.
- The arrow in the upper left-hand corner is the Select All icon, which you can use to select all data in the Notebook window.
- The columns are labeled A, B, C, D, and so forth, to help you identify individual columns. The rows are labeled 1, 2, 3, 4, and so forth, for the same reason.
- The row under the column letters is where you enter your column labels. (Column labels identify a data series and will become the series axis labels on the chart.)
- The column next to row numbers is where you enter your row labels. (Row labels identify a category of data and will become category labels on the chart.)
- The selected cell under the "Label" column is the intersection of the row labels and the column labels. Unless you are making a Table chart, you do not use this cell.

Entering row and column labels

The next step is to enter row and column labels for the data. To do this, you must first select the cell to receive the first label, then type the label on the Editing line and press Return.

2. Use the mouse pointer to click in the cell to the right of row 1.

The cell is now highlighted to show it is selected.

3. **Type "Moon Base" on the Editing line.**

   If you make a mistake, use the Delete or Backspace key to erase incorrect characters, then retype them. Or, you can place the mouse pointer on the Editing line and click to insert characters.

   Note that your entry is not recorded in the selected cell until you press Return, click outside the Editing line, or use the Tab key or one of the arrow keys. The arrow keys register the entry and move the selection one cell in the direction of the arrow.

4. **Press Return, click in the next cell down, or use the Down-Arrow key.**

   The Editing line is cleared for the next entry. "Moon Base" appears as the first category label next to row 1, and the selection moves down one cell to receive your next input.

5. **Type "Mars Base" on the Editing line, then press Return.**

   "Mars Base" appears as the second category label next to row 2, and the selection moves down one cell.

6. **Type "Venus Base" on the Editing line, then press Return or click outside the Editing line.**

   "Venus Base" appears as the third category label next to row 3.

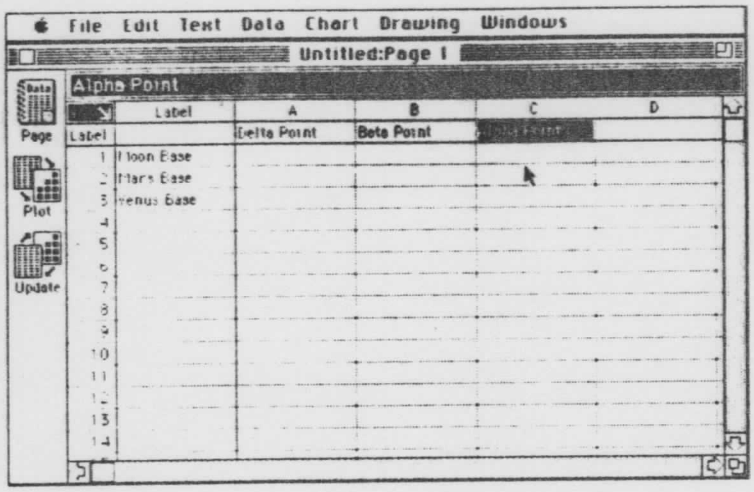
You have now entered all of the row labels for the sample 3-D Column chart.

The next step is to enter the column labels. Do this in the same way that you entered the row labels, but instead of pressing Return after each entry, press the Tab or Right-Arrow key, or use the mouse pointer to click in the next cell to the right to register your data. The Tab and Right-Arrow keys automatically select the next cell to the right.

7. **Under the columns A, B, and C, in the "Label" row, enter the following column labels, respectively:**

   - Delta Point
   - Beta Point
   - Alpha Point

   Your screen should now look like the one that follows, though it might show a different cell selected, depending on the key you used to register your entry:



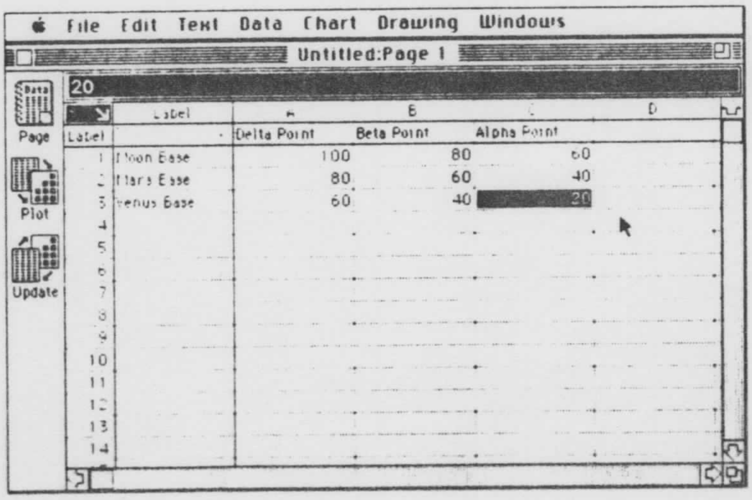
Label	A	B	C	D
Label	Delta Point	Beta Point	Alpha Point	
1 Moon Base				
2 Mars Base				
3 Venus Base				

Entering the data

The next step is to enter the values of the data series you are going to plot. When entering data, use the method that is easiest for you to register your entry:

- click on the cell in which you want to enter the next value
- use the Tab or arrow keys to move the selected cell in the direction you want
- press Return to move the selected cell down one cell from its current position

8. **Use one of the methods described above to enter the data as shown in the following picture:**

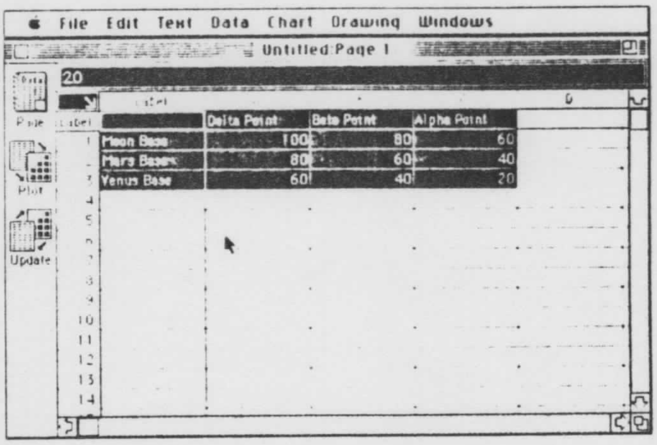


Label	A	B	C	D
Label	Delta Point	Beta Point	Alpha Point	
1 Moon Base	100	80	60	
2 Mars Base	80	60	40	
3 Venus Base	60	40	20	

Plotting the chart

9. **Click on the Select All icon (the black box with the white arrow in the upper left) to select all of the data on the current page in the Notebook window.**

DELTAGRAPH selects all three data series and their associated row and column labels, as shown in the following picture:



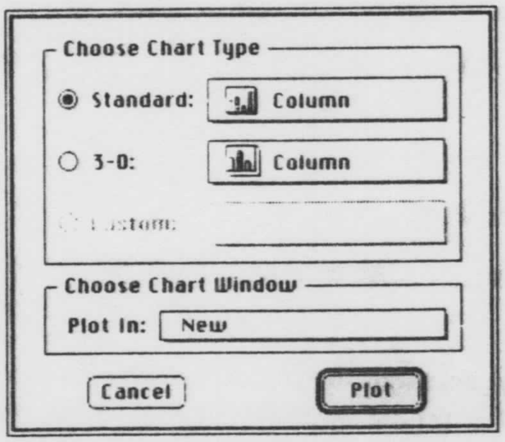
20

Label	Delta Point	Beta Point	Alpha Point
Moon Base	100	80	60
Mars Bases	80	60	40
Venus Base	60	40	20

Plot

10. Click on the Plot icon on the left side on the Notebook window.

The "Choose Chart Type" dialog appears. (This dialog is described in detail in Chapter 4, "Plotting Data.")



● Standard: Column

○ 3-D: Column

Plot In: New

The dialog has pop-up menus that display the Standard, 3-D, and Custom chart types you can make with DELTAGRAPH. It also lets you choose an existing Chart window in which to plot data, in case you do not want to use a new window, which is the default.

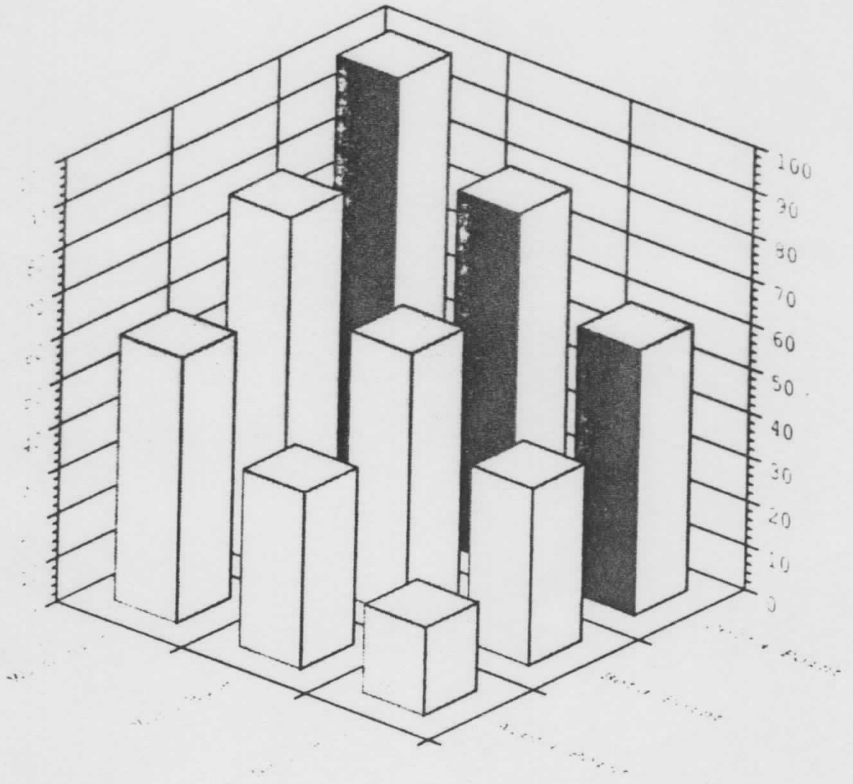
11. Click on the 3-D button, or simply click on "Column" next to the 3-D button, to tell DELTAGRAPH that you want to make a 3-D Column chart.

"Column" is the first entry in the pop-up menu of 3-D chart types.

12. Click on the Plot button.

DELTAGRAPH displays the 3-D Column chart in Chart Window #1, the default name of the first Chart window you make.

Note: If you are working on a small screen, you might need to scroll down to see the bottom of the chart.



Notice these things about the Chart window:

- The Chart window appears on top of the Notebook window. You can see a portion of the Notebook window in the background.
- The default name of the first Chart window you make is "Chart Window #1." (Because you can have up to 30 Chart windows associated with each document, each Chart window has a name. You can use the **Chart Window Title...** command in the Windows menu to give your Chart window a different name. See "Naming a Chart window" in Chapter 5 if you need help using this command.)

- The Drawing palette is on the left side of the Chart window. (See Figure 1-1 for a labeled diagram of the Drawing palette.) The Color and Pattern palettes are discussed in detail in Chapter 5, "Editing Your Chart." The drawing tools are discussed in detail in Chapter 6, "Drawing in the Chart Window."
- Value labels are in a vertical row and appear on the right and left of the chart.
- Row labels appear on the horizontal category axis on the lower left side of the chart.
- Series labels appear on the horizontal series axis on the lower right side of the chart.
- Each data series (or set of bars from a column of values in the Notebook window) is shown in the same pattern.
- A data series is made up of data graphics — the graphics that represent the values in a column of data in the Notebook window.

Chapter 5, "Editing Your Chart," discusses all the parts of a chart in detail, and tells you how to edit each one.

In the next part of this tutorial, you will learn to apply a few of the frequently used features of DELTAGRAPH. Use this section to experiment and get the feel of working with DELTAGRAPH, and do not worry if your chart looks different from the charts shown.

If you make a change that you don't like, you can use the **Undo** command in the Edit menu to undo the most recent change.

Changing the font style and size

To make changes to a chart you must first select the chart.

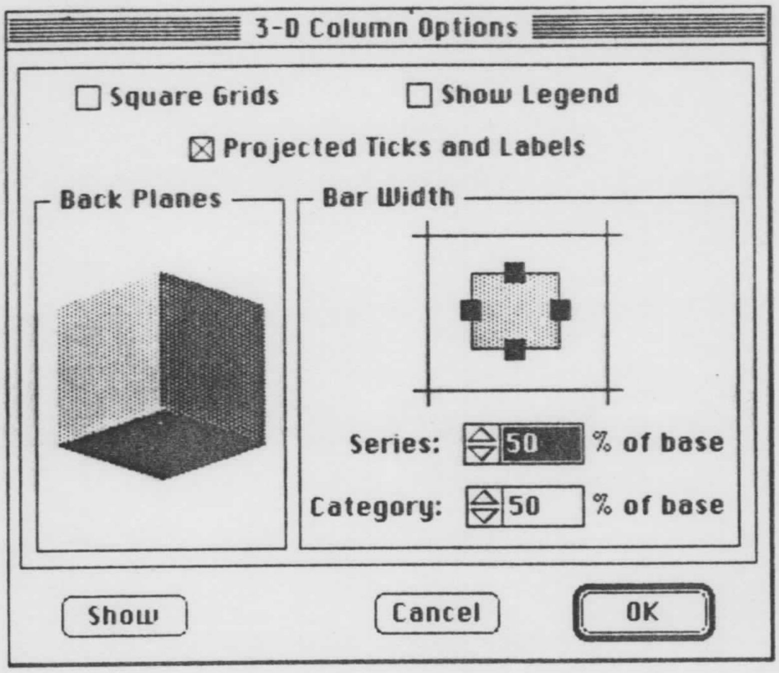
13. **Select the chart by placing the mouse pointer anywhere on the chart and clicking once.**

    Object handles (small squares) and axis resizing handles (large squares) appear to show that the chart is selected. These handles are described in detail in Chapter 2, "DELTAGRAPH Concepts."

The next step shows you how to turn off 3-D perspective on labels. This makes the chart labels easier to read on the screen, and on any QuickDraw printer.

14. Choose the Options... command from the Chart menu.

The "3-D Column Options" dialog appears:



☐ Square Grids
☐ Show Legend
☒ Projected Ticks and Labels
Series: 50 % of base
Category: 50 % of base

This dialog is documented in detail under "Using options" in Chapter 5.

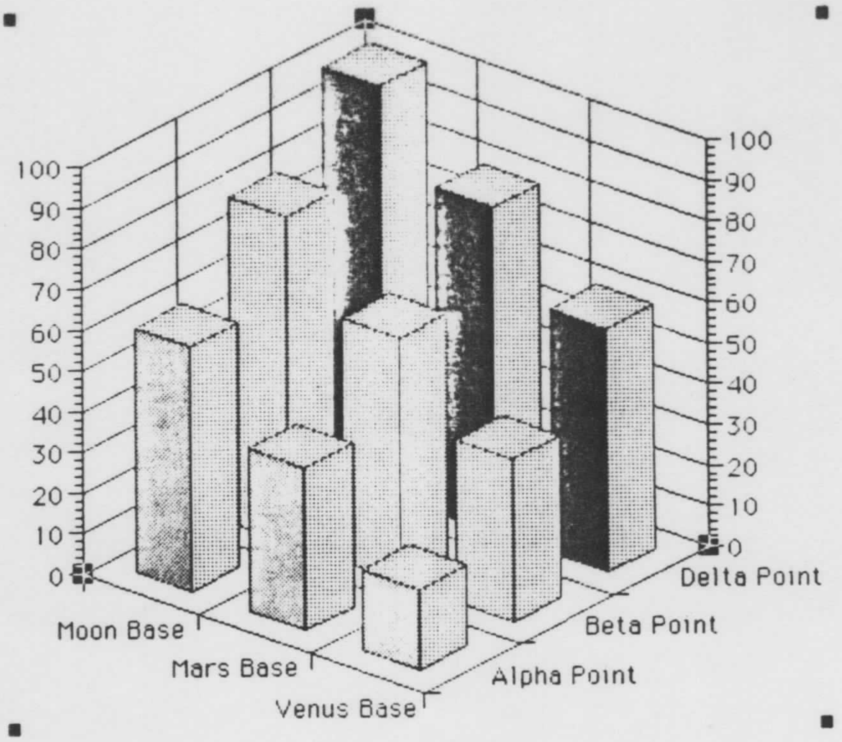
Notice that you can drag the Title bar of most dialogs to move them away from your viewing area.

Also notice the Show button, common to many DELTAGRAPH dialogs. You can make changes in a dialog and click on the Show button to preview the results without changing the chart. You can click OK to implement the changes, or click Cancel to exit the dialog without changing the chart.

15. Click on "Projected Ticks and Labels" (to turn off the 3-D perspective, which is the default setting), then click OK.

The dialog closes, and the chart labels are redrawn at a different angle, now appearing quite readable on the screen.

The chart now looks like this:



16. **Choose the Font command from the Text menu to display a hierarchical menu of all the fonts that are installed in your System file. Select one of your fonts, such as Times, Palatino, or Helvetica.**

    (The default font for the Chart window is 12-point Geneva, so select a different font to see a change.)

    All of the text on the chart (value, category, and series labels) changes to the font you selected.

You can use the commands in the Text menu to change the size, style, and other text attributes on the chart in the same way.

Changing fill patterns

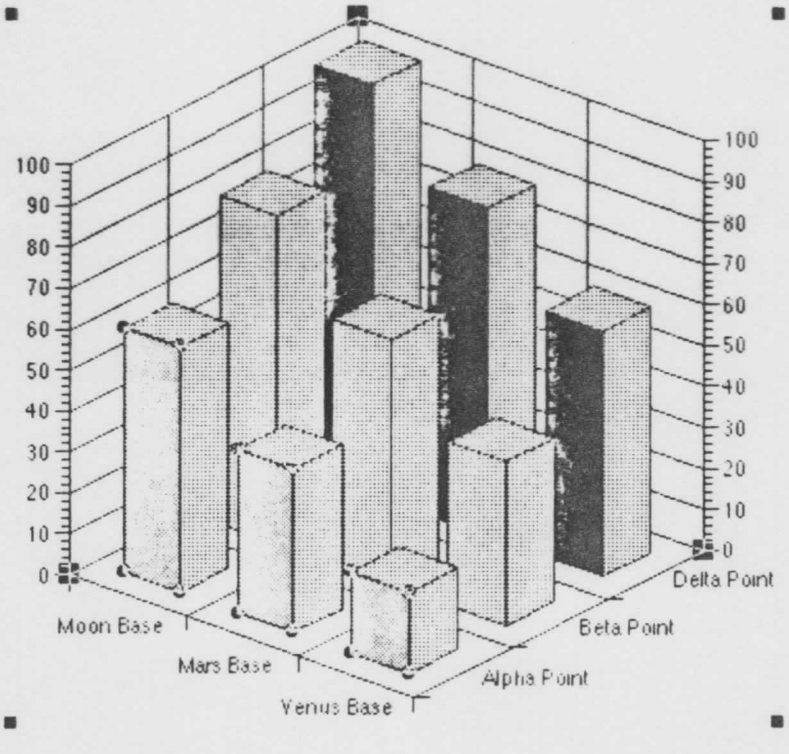
You use the Drawing palette on the left side of the Chart window to change fill patterns, line patterns, line widths, and colors on your chart. These operations are described in detail in Chapter 5, "Editing Your Chart."

Each bar on this 3-D Column chart is a data graphic. Each bar is also a member of a data series. You can select the fronts, sides, or tops of these data graphics.

Changes in the Drawing palette affect the fill color and fill patterns of selected data graphics, and the line colors and line patterns of the lines surrounding the selected graphics.

17. **To select a data series, first place the mouse pointer on the chart and click to select the whole chart, if it is not already selected. Decide which data series to change, then click again on one of the data graphics in the series.**

    If you clicked on one of the bars in the data series in the foreground, your chart now looks something like this:



When you select a data series, the Drawing palette changes to show the colors and/or patterns of the selected series. If you are working with a black-and-white monitor, the color palettes show percentages of gray shades, in an approximation of the intensity of colors.

For example, the Drawing palette now shows the following patterns and gray shades, or colors if you are working in color:

- the foreground color (or gray-shade equivalent) of the selected data series
- the background color (or gray-shade equivalent) of the selected data series

- the foreground color (or gray-shade equivalent) of the lines around the selected data series
- the background color (or gray-shade equivalent) of the lines around the selected series
- the fill pattern of the selected data series
- the line pattern of the selected data series

Note: Background colors are relevant only if the fill pattern is not solid black or solid white, because the background color comes from the spaces created by a "porous" pattern.

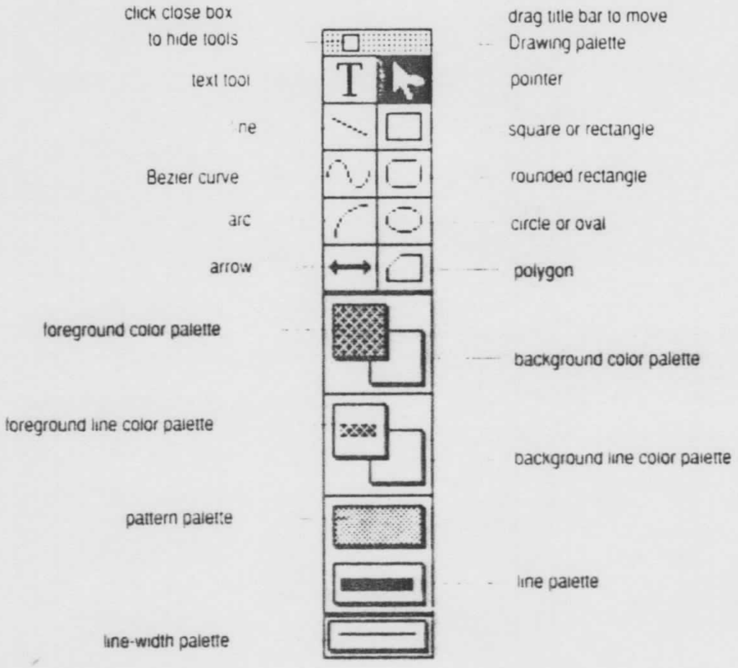
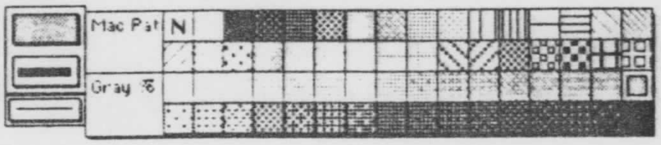


FIGURE 1-1. DELTAGRAPH DRAWING PALETTE

18. **Press the Fill-pattern palette (third icon up from the bottom of the Drawing palette) and choose a pattern that is different from the current one (surrounded by a selection rectangle).**



Each graphic in the data series changes to reflect the new pattern, as does the pattern showing on the Pattern palette.

You can do the same for foreground and background colors if you wish.

You can also do the same for line patterns and colors. Line patterns show up better if you use the Line-width palette to increase the thickness of the selected lines.

You will probably need to experiment with this for awhile to become familiar with the effects of these palettes. Complete instructions for each palette are in Chapter 5. "Editing Your Chart."

You should know the following about selecting parts of a chart:

- Click once to select the whole chart.
- Click again on a back plane to select the chart background. You can tell the background of this 3-D column chart is selected when you see four small circles (chart element handles) appear: three on the remaining corners, and one in the middle, showing through the data graphics at the intersection of the three axes.
- Click once on a data graphic to select a whole data series.
- Click again on a data graphic to select only that specific data graphic in the series.
- Click once on a label to select a whole set of labels.
- Click again on a label to select just that specific label.
- Click on a grid line to select a set of grid lines to change with the Drawing palette.
- Click on a tick mark to select a set of tick marks to change with the Drawing palette.

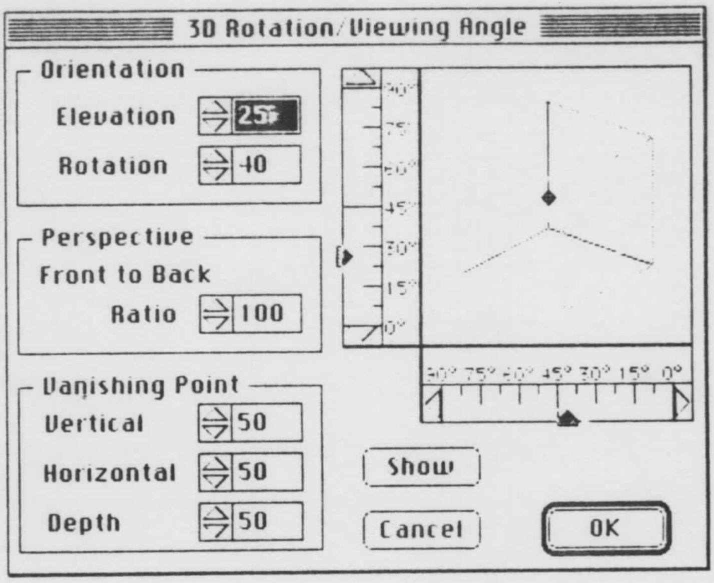
See "Selecting parts of the chart" in Chapter 5 for details.

Using the 3-D View... command

19. Select the chart if it is not already selected.

20. Choose the 3-D View... command from the Chart menu.

DELTAGRAPH displays the "3D Rotation/Viewing Angle" dialog:



3D Rotation/Viewing Angle

Orientation

Elevation 25

Rotation 40

Perspective

Front to Back Ratio 100

Vanishing Point

Vertical 50

Horizontal 50

Depth 50

This dialog is documented in detail in Chapter 5, "Editing Your Chart." For now, you can experiment with it.

Notice the following about this dialog:

- It controls the orientation, perspective, and vanishing point of a three-dimensional chart.

  The graphic cube in the upper right-hand corner of the dialog shows you a representation of the changes you make to orientation, perspective, and vanishing point in this dialog. The cube changes as you change settings.

- "Orientation" controls the angle (up and down and side to side) of the chart, relative to the eye, through the elevation and rotation settings.

  You can use the direction arrows under "Orientation" to scroll through the numbers, or drag the arrows in the Vertical and Horizontal Degree bars to the left and beneath the graphic cube, to change the orientation settings.

- "Perspective" controls the apparent distance of the back of the chart relative to the front of the chart. You can use the direction arrows to scroll through the numbers for Front to Back Ratio.

- "Vanishing Point" controls the point the eye is looking at. The vanishing point is represented by the diamond in the middle of the graphic cube. You can use the direction arrows to scroll through the numbers available for Vertical, Horizontal, and Depth settings.

21. **Change an elevation or rotation setting in the dialog.**

    The graphic cube in the dialog changes to show you the approximate position of the chart at a given setting.

22. **Click the Show button to preview the chart with your new setting.**

    You can drag the Title bar of the dialog to move it away from your viewing area. On a small screen you may have to move it most of the way off the screen.

23. **Now change the perspective ratio by clicking several times on the down direction arrow. Click Show to preview the results.**

24. **Continue experimenting by changing the settings then clicking the Show button to preview the results.**

    In this way you can become familiar with the effects of the "3D Rotation/ Viewing Angle" dialog.

25. **When you are done experimenting, click the Cancel button.**

    The dialog closes, and your 3-D Column chart is redrawn in the Chart window with no changes to the 3-D View.

Saving your document

26. **To save your document, choose the Save or Save As... command from the File menu.**

    Because you have not yet named your document, both commands display the "Save As..." dialog.

27. **Type the name "Tutorial Charts" in the space currently occupied by "Untitled."**

    You can correct mistakes in the name and specify a destination drive and folder as you normally do when using the Macintosh. Click on the Save button to save your document in the specified folder.

Note: When creating your own DELTAGRAPH documents, remember that it is always prudent to save your files often as you are creating them.

28. **To go on to the next part of this tutorial, you need to return to the Notebook window. Click on any visible part of the Notebook window, or choose the document name "Tutorial Charts" from the Windows menu.**

    If you want to see the chart again, choose "Chart Window #1" from the Windows menu, then return to the Notebook window. (If you renamed your Chart window earlier in the tutorial, that name will have replaced "Chart Window #1" in the Windows menu.)

This transition is important, because it shows you how to move between the Notebook and Chart windows, create a new Notebook page, and plot data again.

Making a Line Chart

This part of the tutorial shows you how to import data from an Excel 2.2 document and create a two-dimensional Line chart.

In this tutorial you will also learn how to make the following changes to your chart:

- format value labels
- change the line width and line pattern
- change symbols
- add an axis title
- add a chart title
- add a drawing object
- use a fill pattern

You should now see the data you used to plot the 3-D Column chart in the Notebook window on your screen. If you do not, follow step 28 above.

If you did not do the first tutorial, open DELTAGRAPH to display a new Notebook page and follow these steps, beginning with step 2. Your Notebook page name might be different.

1. **Press the Page icon and choose "New Page" from the pop-up menu.**

   DELTAGRAPH displays a new Notebook page for you to work in. Unless you have created another new page, it is called "Page 2" in the Title bar.

Page

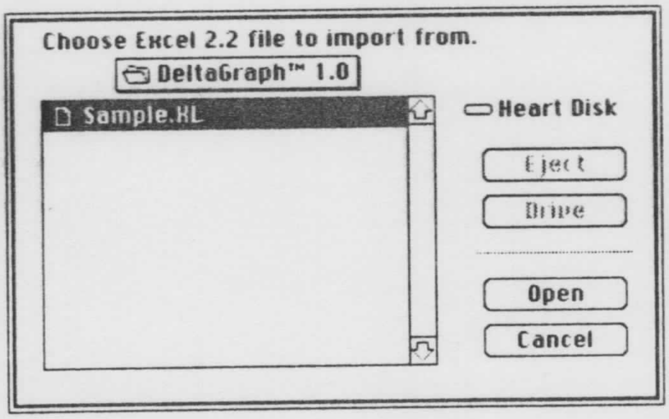
If you press the Page icon again, it now gives you these options:

- New Page
- Page 1
- Page 2

You use the Page icon to select the different Notebook pages in your document.

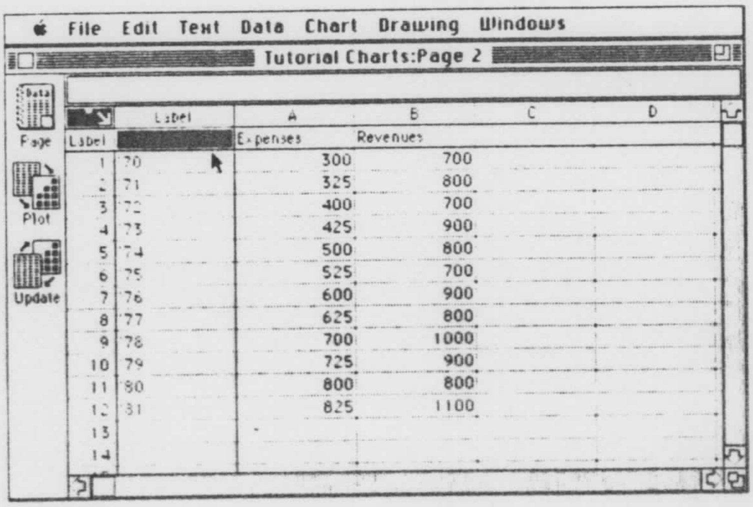
2. **Choose the Import command from the File menu and select the Excel 2.2 command from the hierarchical menu.**

The following dialog appears:



3. **Open the "Sample.XL" document.**

The sample data is imported into the Notebook window and looks like this:



	Label	A	B	C	D
Label		Expenses	Revenues		
1	70	300	700		
2	71	325	800		
3	72	400	700		
4	73	425	900		
5	74	500	800		
6	75	525	700		
7	76	600	900		
8	77	625	800		
9	78	700	1000		
10	79	725	900		
11	80	800	800		
12	81	825	1100		
13					
14					

4. **Click on the Select All icon (the arrow in the upper left) to select all the data.**

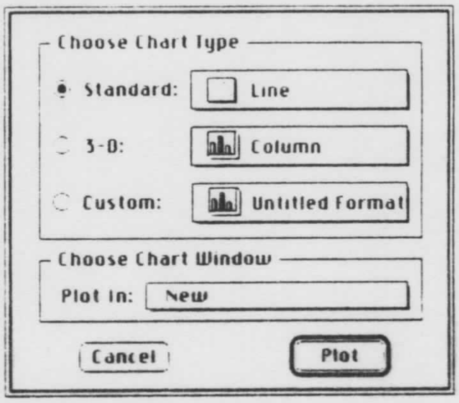
Plot

5. **Click on the Plot icon on the left side of the Notebook window.**

The "Choose Chart Type" dialog appears.

6. **Press on "Column," next to "Standard," to display the pop-up menu of Standard chart types. Drag down until Line chart is selected, then release the mouse button.**

The Line chart icon and chart name "Line" now appear in the dialog.



Choose Chart Type

● Standard: Line

○ 3-D: Column

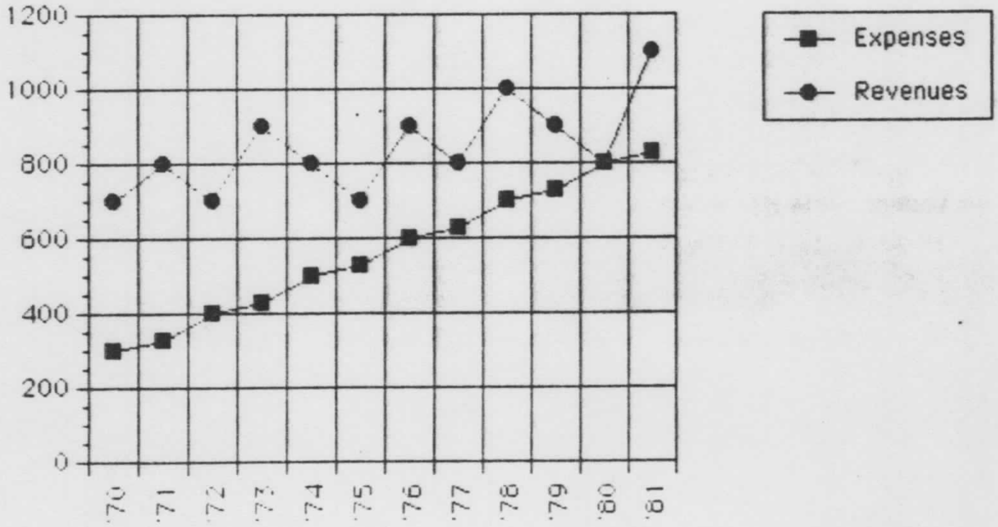
○ Custom: Untitled Format

Choose Chart Window

Plot In: New

7. **Click on the Plot button.**

DELTAGRAPH displays the Line chart as shown:



DELTAGRAPH automatically rotates axis labels that are too large or too numerous to fit comfortably on the axis in an upright position.

Upright category axis labels make the chart easier to read. You can accomplish this in several ways:

- use the **Size** command in the **Text** menu to make the text smaller
- use the Labels option in the **Axis** command to show every other label
- use the axis resizing handles to make the category axis longer

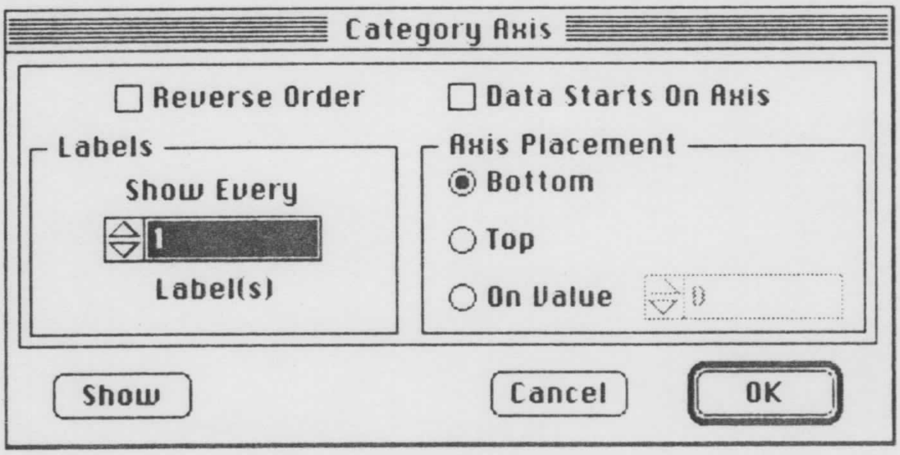
The next section walks you through the last two methods.

8. Click once on the chart to select it.

The object handles (small squares) and axis resizing handles (large squares) appear to show that the chart is selected. Notice that the legend is included in the selected chart.

9. Choose the Axis command from the Chart menu and select "Category."

The "Category Axis" dialog appears.



Category Axis

☐ Reverse Order

☐ Data Starts On Axis

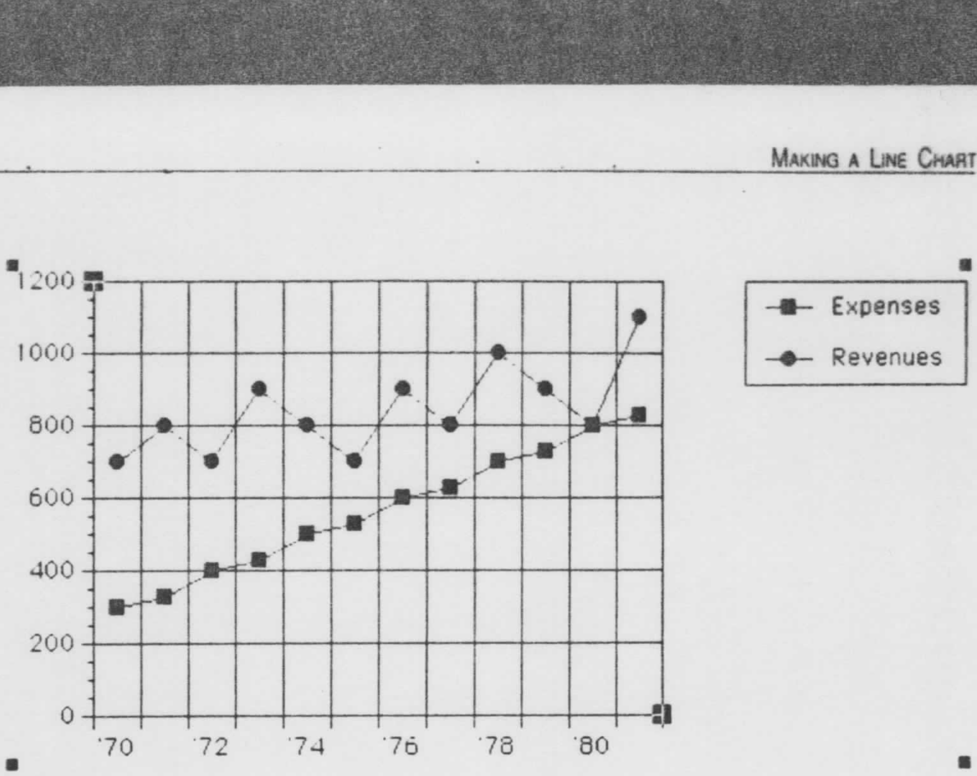
Labels: Show Every 1 Label(s)

Axis Placement: ● Bottom ○ Top ○ On Value 0

10. Enter the number 2 in the selected box under "Labels," to tell DELTAGRAPH to show every second label. Click the Show button to preview the results, then click OK.

(This dialog is documented in detail under "Changing Axes" in Chapter 5.)

The chart now looks like the illustration that follows:



11. **Place the mouse pointer on the axis resizing handle (large square) at the bottom right, click and then drag to the right about half an inch.**

    A dotted outline appears to show you the new size. Release the mouse button. The chart is now slightly longer, and there is less distance between the chart and the legend.

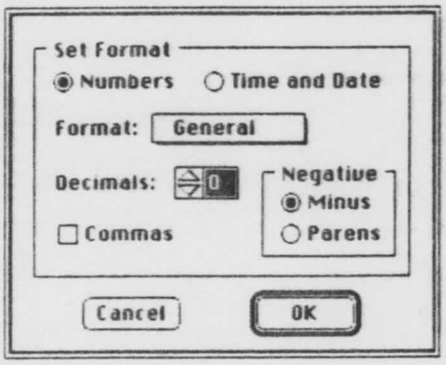
    If you seem to be running out of room in the Chart window, don't worry. Charts and other drawing objects automatically scroll when you drag one of their handles outside the window border.

Formatting value labels

You can change the format of value labels on the chart. On this chart, it is appropriate to change the value labels to currency.

12. **With the chart selected, choose the Format... command from the Data menu.**

    The "Set Format" dialog appears:



Set Format

● Numbers ○ Time and Date

Format: General

Decimals: 0

☐ Commas

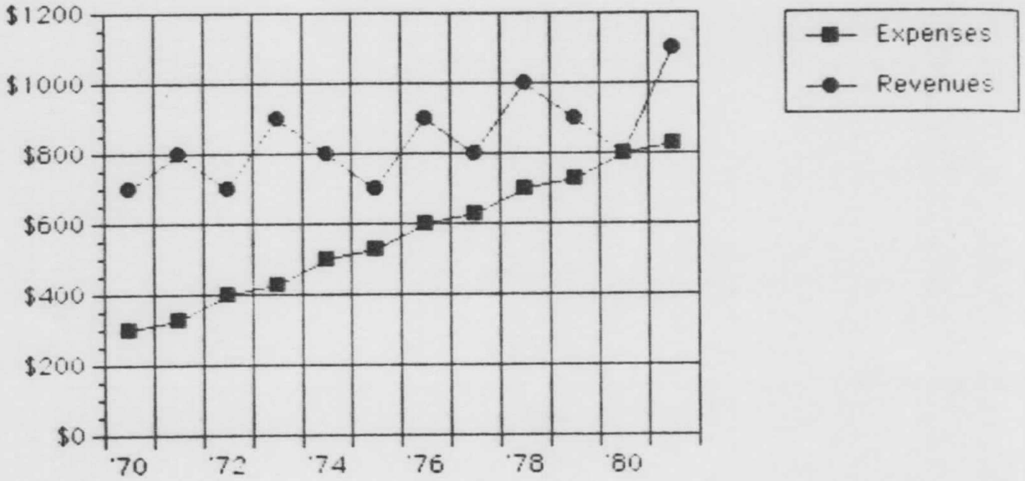
Negative

● Minus

○ Parens

13. Press on "General" to display the Format pop-up menu, then drag down until currency is selected and release the mouse button. Click OK.

The chart now looks like this:



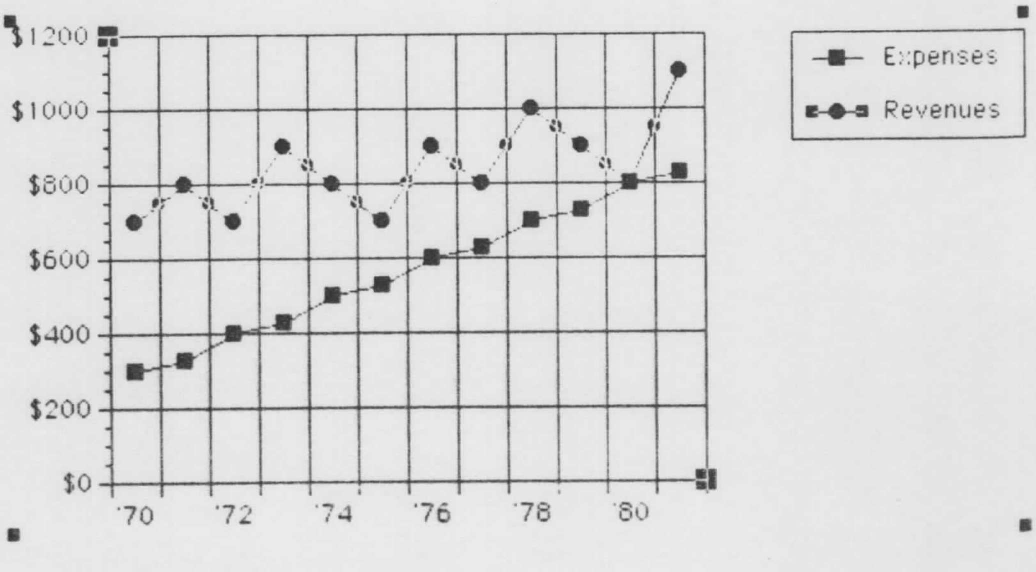
Changing the line width and line pattern

On a line chart, you will often want to give each line a different pattern or weight.

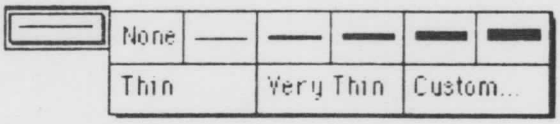
14. Be sure the chart is selected.

15. Click again anywhere on the top line (Revenues), but not on the symbols.

Chart element handles (small circles) appear to show that the line is selected. The chart now looks like this:

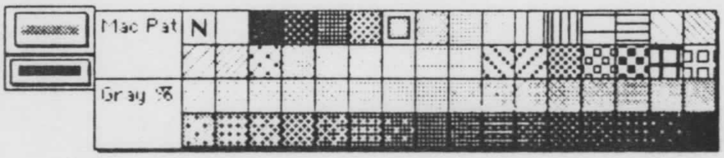


16. **Press on the Line-width icon (the bottom icon) in the Drawing palette to display the pop-up menu, then choose the thickest line.**

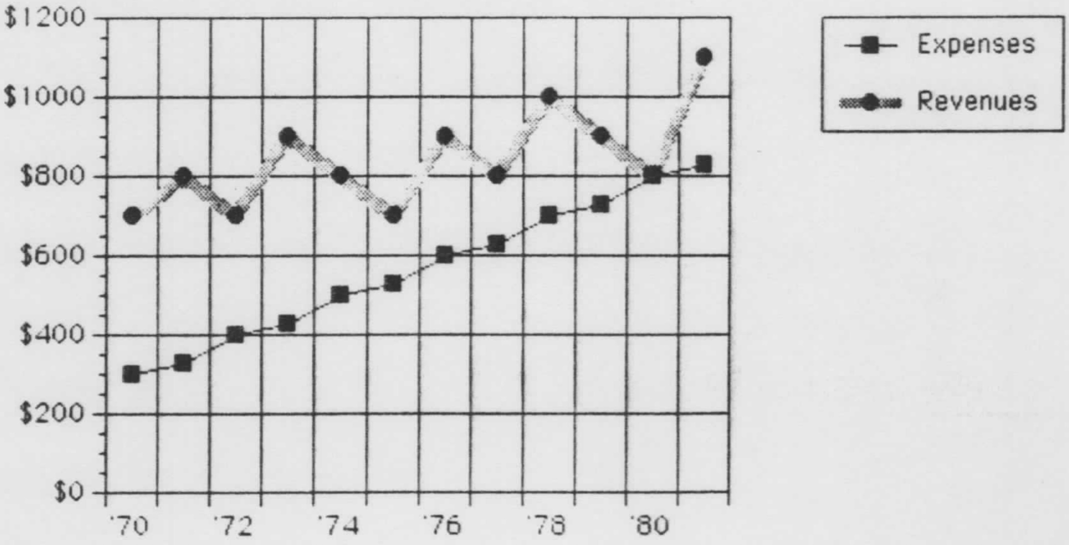


The selected line becomes thicker.

17. **With the line still selected, select the Line-pattern palette from the Drawing palette (second icon up from the bottom) and choose a pattern different from the current pattern.**



The chart now looks something like this:

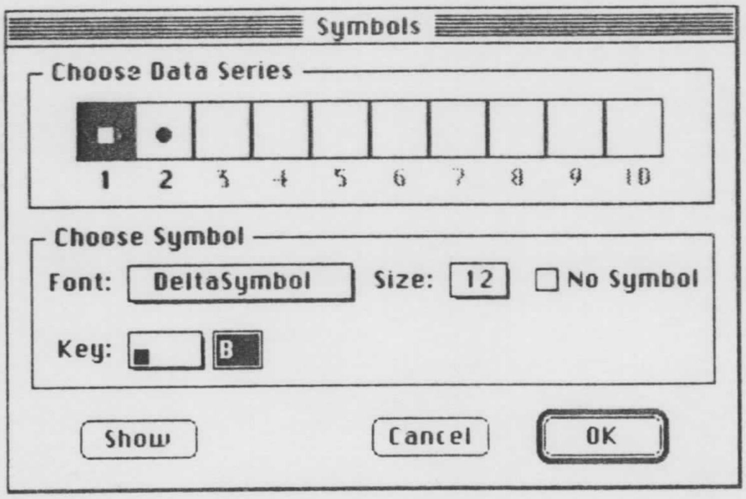


Changing symbols

DELTAGRAPH comes with a special set of symbols, supplied in a font called "DeltaSymbol." You can use this font to change the default symbol characters on the chart. If you have not yet installed the DeltaSymbol font, your chart and the following dialogs will appear different than those shown. Refer to "About the DeltaSymbol font" at the beginning of this chapter if you want to install DeltaSymbol now.

18. With the chart selected, select the Symbols... command from the Chart menu.

The "Symbols" dialog appears:



Font: DeltaSymbol
Size: 12
☐ No Symbol

Notice the following about the Symbols dialog:

- You can drag the Title bar of the dialog to move it away from your viewing area.
- The default symbol for the first data series in the Notebook window (Expenses) is selected.
- There are two data series in this chart, so there are two symbols showing.
- The default font is DeltaSymbol. (All fonts currently installed in your system file are available. You can change the font by selecting a different one from the pop-up menu.)
- The default size is 12 point. (You can change this by selecting a different size from the pop-up menu.)

- The current symbol for the selected data series, and the keyboard character associated with it, are shown next to "Key."
- This dialog has a Show button.

19. Press the solid square symbol next to "Key" to display all of the symbol characters available in the DeltaSymbol font, then select a different symbol to use on the Expenses line.

When you release the mouse button, the selected symbol appears next to "Key" in the dialog.

20. Click the Show button to preview the results without exiting the dialog. When you have selected a symbol you like, click OK.

The new symbols appear on the Expenses line.

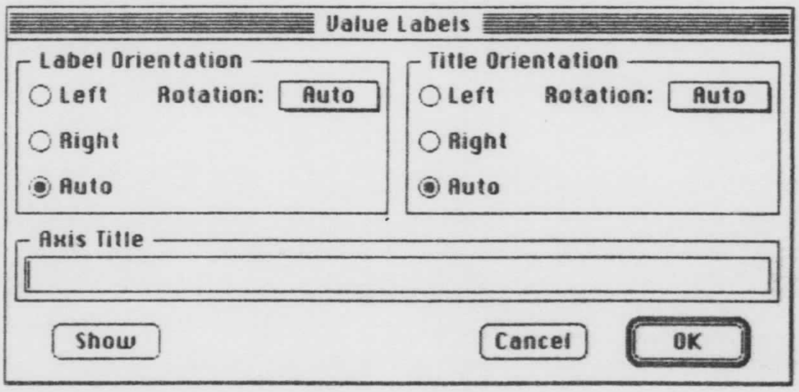
Adding an axis title

You can add a title to each axis to show what is being measured or compared on that axis.

21. Select the chart, if it is not already selected.

22. Choose the Labels command from the Chart menu and select "Value" from the hierarchical menu for the Value axis.

The "Value Labels" dialog appears:



Label Orientation
○ Left Rotation: Auto
○ Right
● Auto

Title Orientation
○ Left Rotation: Auto
○ Right
● Auto

Axis Title

23. Type "In Thousands" under "Axis Title" and click OK.

The value axis title appears on the left side of the chart.

Adding a chart title

T

You can use the Text tool (T) in the Drawing palette to add text objects, such as a chart title, to your chart.

24. Select the Text tool from the Drawing palette.

The mouse pointer changes to an I-beam.

25. Place the I-beam in the upper left-hand corner of the Chart window and drag to the right and down about 3/4 of an inch until you see a dotted rectangular box that stretches the length of the chart, then release the mouse button.

Object handles (small squares) appear to show the location of the text box. The insertion point is flashing at the left side of the text box.

26. Type "Revenues Exceed Expenses over Ten-year Period."

If you make a mistake, use the Delete key to backspace and correct the error.

27. Choose the Alignment command from the Text menu and select "Center."

The text moves to the center of the text box.

28. Click outside the text box to end typing.

The I-beam changes back to a pointer, and the pointer is automatically selected again in the Drawing palette.

29. Click on the text to select it.

The object handles reappear to show it is selected.

30. Choose the Size command from the Font menu and select 18 point.

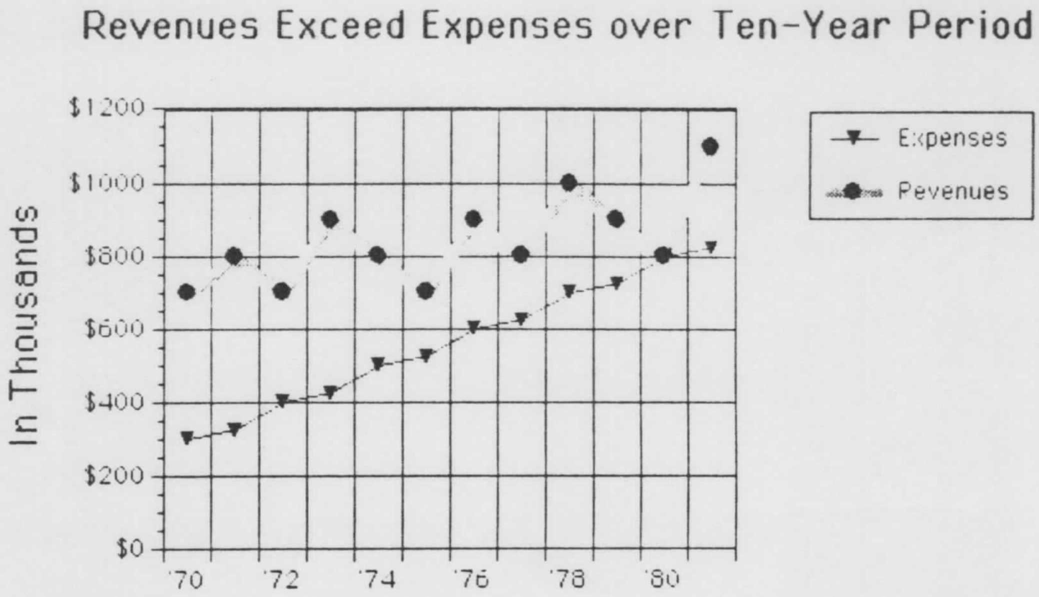
The text changes to 18 point.

31. Choose the Style command from the Text menu and select "Bold."

The text changes to bold and might not fit in the text box.

32. In this case, to enlarge the text box, select it and drag the right-hand corner down until the text fits inside the box. You can also place the pointer inside the text box and drag it until it is where you want it.

The chart now looks something like this:



Adding a drawing object

You can use the tools in the Drawing palette to add a variety of special effects to your chart. This section shows you how to place a background around the chart title and fill it with a pattern.

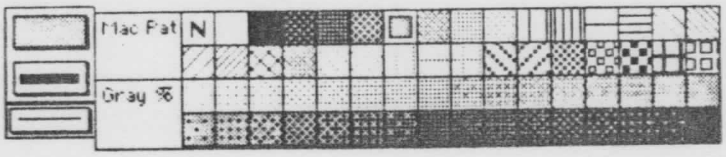
33. Select the Rounded Rectangle tool from the Drawing palette.

The pointer changes to a cross.

34. Press the Option key while you drag (to temporarily turn off "Snap to Grid") and drag a dotted rectangle around the title until it is covered. Release the mouse button.

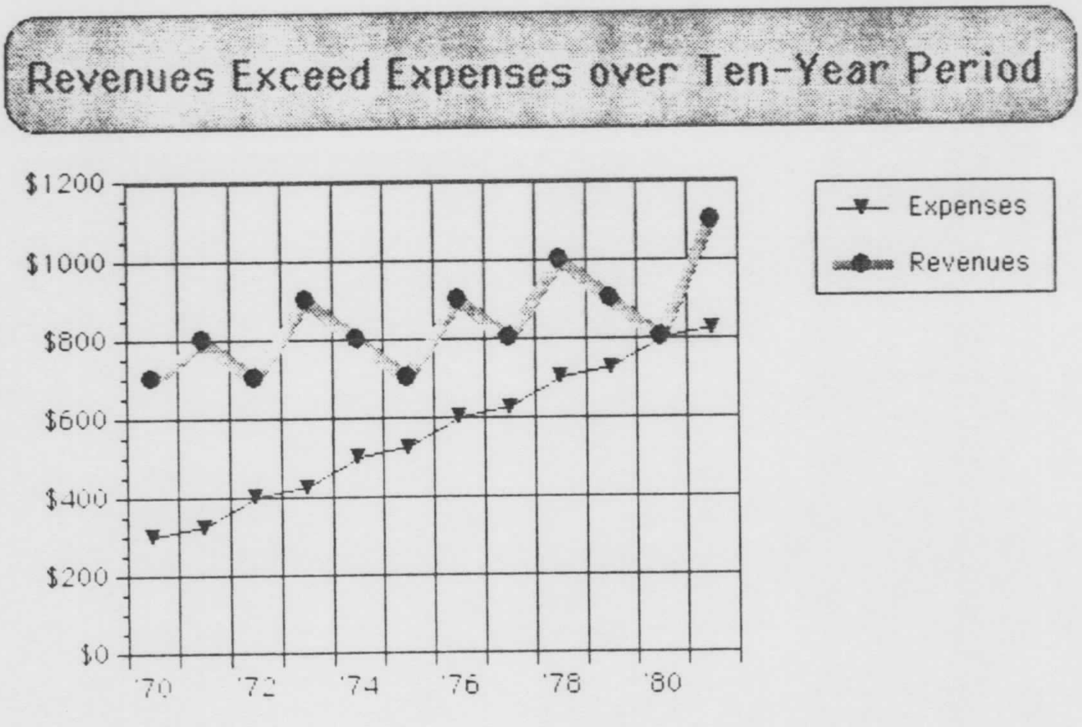
The rectangle covers the title and is filled with the pattern and colors or shades showing in the Foreground and Background color palettes, and the pattern in the Pattern palette. If the Pattern palette shows solid white or solid black, you see a solid color in the rectangle.

35. With the rectangle still selected, choose a light, even pattern from the Pattern palette (third icon up from the bottom.) The rounded rectangle changes to this pattern.



36. With the rectangle still selected, choose the Send command from the Drawing menu and select "To Back" from the hierarchical menu

The chart now looks something like this:



This concludes the tutorial. You have now learned how to perform the following tasks:

- open DELTAGRAPH
- enter row and column labels
- enter data
- choose a chart type and plot data
- change font attributes

- change fill patterns
- name and save your chart
- format value labels
- change line width and line patterns
- change symbols
- add an axis title
- add a chart title
- add a drawing object

Remember that you can put logos or other graphic images on your charts by importing them as PICT or EPSF graphics. See Chapter 7, "Importing and Exporting Graphics," for detailed instructions.

For instructions on printing charts, see Chapter 8, "Printing Charts."

This tutorial has shown you the basics of creating and formatting charts in DELTAGRAPH. You can learn more about DELTAGRAPH's many other easy-to-use features by continuing with the rest of the manual and experimenting on your own.

Chapter 2 DELTAGRAPH Concepts

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About the Chart Window 2-5
    About DeltaGraph objects 2-6
    Identifying object handles 2-8
    About the Drawing palette 2-9
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2 DeltaGraph Concepts

This chapter describes basic principles you should know to operate DeltaGraph efficiently. The chapter introduces DeltaGraph windows, drawing tools, objects, object handles, basic elements of a chart, and the DeltaGraph Help system. DeltaGraph's Notebook and Chart windows, drawing tools, and menu commands are discussed in detail in later chapters.

Typically, you will follow these basic steps when you work in DeltaGraph:

1. Open DeltaGraph.
2. Enter or import data into the Notebook window.
3. Select the data that you want to plot.
4. Choose the **Plot...** command to select a chart type from the list of standard and three-dimensional charts.
5. Edit your chart in the Chart window, using DeltaGraph's full set of colors, patterns, line weights, fonts, text-editing features, symbols, and special options.
6. Add text and graphics to your chart using DeltaGraph's drawing tools.
7. Name and save the chart.
8. Print the chart.

The following sections provide general information to help you understand the operation of DeltaGraph.

About DeltaGraph Windows

DeltaGraph contains two kinds of windows:

- Notebook window, where you enter data
- Chart window, where you modify and enhance your chart

You can use the **Position** command in the Windows menu to tile, stack, or arrange the windows side by side.

About the Notebook Window

The Notebook window is the first window you see when you open DeltaGraph. This is where you enter the data you want to plot, along with the column and row labels that identify the data.

The Notebook window contains Notebook pages. To begin, you need only Page 1 of the Notebook. If you want to add new data and keep it separate from the data on Page 1, you can create a new Notebook page by clicking on the Page icon in the upper left-hand corner and selecting "New Page."

DeltaGraph supplies the default names "Page 1," "Page 2," and so forth for the Notebook pages. You can name Notebook pages to help identify the data they contain.

Note: Although the default names use numbers, they are names, and therefore are not renumbered when you delete a Notebook page.

Before you save your DeltaGraph document, the name "Untitled" is in the Title bar of the Notebook window, followed by the page name. After you name and save the document, the document name appears in the Title bar of the Notebook window.

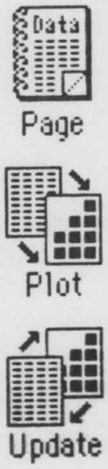
The document name also appears in the Windows menu, where all the windows associated with the current document are listed.

When you are working in the Notebook window, you typically use the File, Edit, Text, and Data menus.

The default for text in the Notebook window is 10-point Geneva, plain black. Changes to text attributes in the Notebook window affect the whole Notebook page. You can use the **Set All...** command in the Text menu to change all text characteristics for the Notebook window at the same time.

The Notebook window is shown and discussed in detail in Chapter 3, "Working with Data."

About the Notebook icons



The three icons at the left appear along the left side of the Notebook window. They are:

- Page icon
- Plot icon
- Update icon

You use the Page icon to display a pop-up menu of Notebook pages currently associated with the document. If you have not used the **New Page** command to create a new Notebook page, you see only "New Page" and "Page 1" (or the page name you assigned to Page 1).

To create a new Notebook page, simply click on the Page icon and select "New Page." To display a different Notebook page, click on the Page icon and select the page name you want to see.

You can click on the Plot icon instead of using the **Plot...** command in the Chart menu to display the "Choose Chart Type" dialog when you are ready to plot your selected data.

When you change data in the Notebook window, you can click on the Update icon or choose the **Update** command in the Data menu to automatically update any charts associated with the Notebook window.

About the Chart Window

When you plot the data in the Notebook window, the chart you create is displayed in a Chart window. Each time you plot data in the Notebook window, you have the option of creating a new Chart window, adding a chart to an existing Chart window, or updating the chart in an existing Chart window.

See "Creating a chart" in Chapter 4 for detailed instructions on creating a chart.

You can have up to 30 Chart windows in a DELTAGRAPH document. DELTAGRAPH gives Chart windows the default names "Chart Window #1," Chart Window #2," and so forth. You can give your Chart windows more meaningful names to help identify them. The Chart window names associated with the current document appear in the Windows menu.

See "Naming a Chart window" in Chapter 5 for more information.

If you change data in the Notebook window, you can use the **Update** command in the Data menu, or the Update icon on the left side of the Notebook window, to automatically replot any associated charts.

Many of the dialogs invoked from the Chart window have a Show button that enables you to preview the results of your selections without exiting the dialog. You can drag the Title bars of these dialogs to move them away from the viewing area.

About DELTAGRAPH objects

The Chart window can contain three types of objects. Table 2-1 describes the three types of objects contained in the Chart window:

TABLE 2-1. DELTAGRAPH'S CHART WINDOW OBJECTS

Object	Definition/Description
Chart object	**A DeltaGraph chart.** A chart object contains many chart elements. You generally use the Drawing palette and the commands in the Text and Chart menus to manipulate the elements in a chart object, and the chart object itself.
Drawing object	**Any object you add to the chart using the Drawing palette.** You generally use the Drawing palette and the commands in the Drawing menu to manipulate drawing objects.
Text object	**Any text you add to the chart using the Text tool in the Drawing palette.** You can use the commands in the Edit menu to edit the text in text objects; the commands in the Text menu change the style attributes of the text.

Note: You can edit text objects created in the Chart window, but you cannot edit text that is part of the chart, such as axis values, labels, and titles. You can change the style attributes (color, font, style, and so forth) of the chart labels, but you cannot change the characters.

To change the text in chart labels, you must edit the row and column labels in the Notebook window. To change the value labels, you must alter the data, or use the **Axis** command in the Chart menu to change the axis scale and increments.

You can, however, use the **Format** command in the Data menu to change the format (percent, currency, and so forth) of value labels in the Chart window.

Figure 2-1 shows the three kinds of objects in the Chart window.

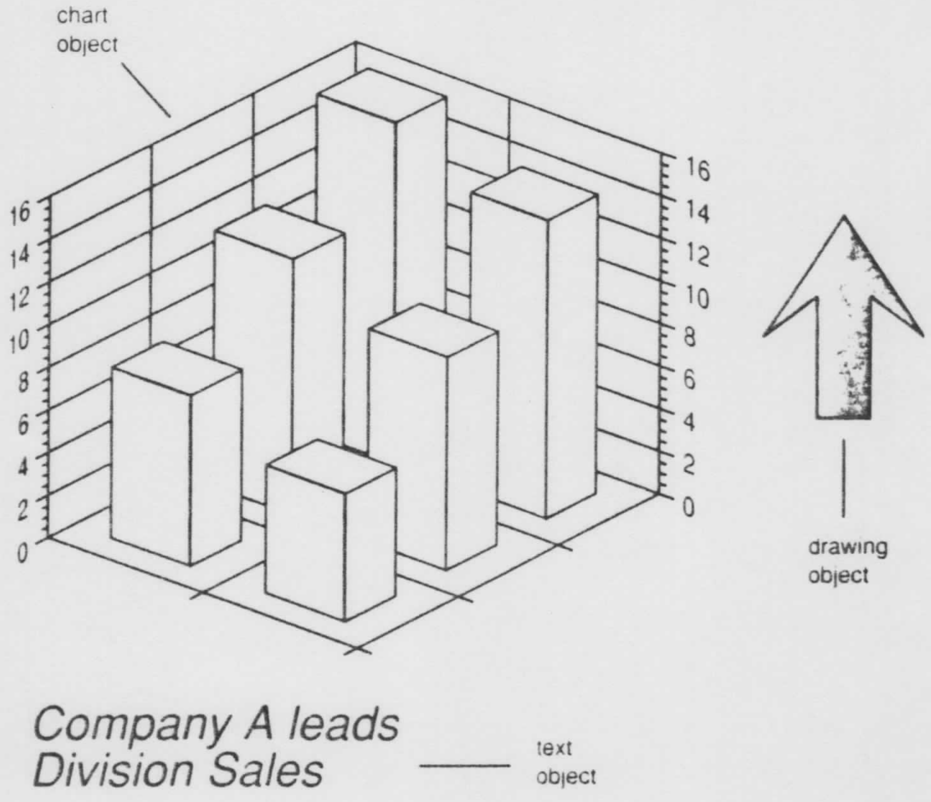


FIGURE 2-1. DELTAGRAPH OBJECTS

See Chapter 5, "Editing Your Chart," for step-by-step instructions on selecting objects in the Chart window and working with the chart elements.

Identifying object handles

When you select an object in DELTAGRAPH, object handles appear around the object to show it is selected. Table 2-2 describes the three types of object handles in DELTAGRAPH.

TABLE 2-2. OBJECT HANDLES

Handle	Description
Object handles	**Small squares surrounding a selected chart or drawing object.** You can drag object handles to change the size and shape of a drawing object or text object.
Chart element handles	**Small circles surrounding a selected chart element.** You cannot move chart elements, but when they are selected you can change their color, pattern, and line styles. If the element is text, you can change the text attributes.
Axis resizing handles	**Large squares at the endpoint of each axis on a chart.** You can drag the axis resizing handle to lengthen or shorten the axis. This resizes the chart in one direction along the axis, but does not affect the perspective.

Figure 2-2 illustrates the three types of object handles. In this chart the whole chart object, the chart background, and one data series are selected. For a detailed discussion of selecting chart elements, see "Selecting parts of the chart" in Chapter 5.

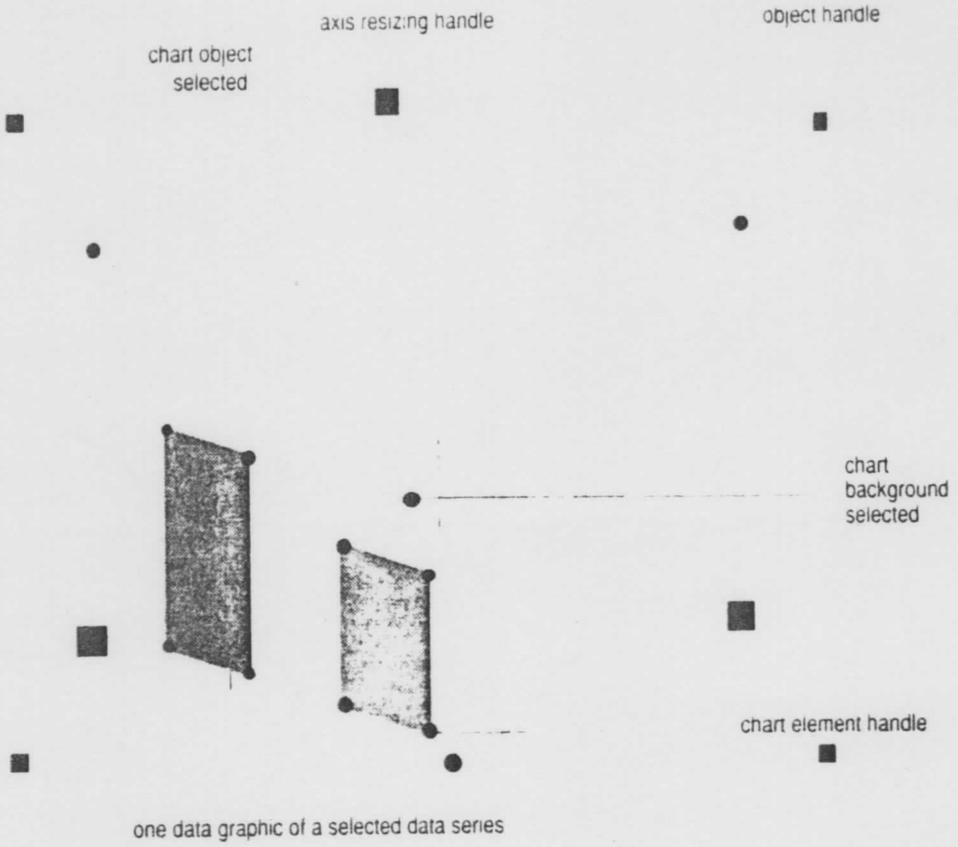


FIGURE 2-2. DELTAGRAPH OBJECT HANDLES

About the Drawing palette

The Drawing palette contains a set of drawing tools, plus color, pattern, and line palettes. You can move the Drawing palette by dragging the Title bar. You can use the Undo command in the Edit menu to undo actions made with the drawing tools. Figure 2-3, on the next page, labels the different tools in the DELTAGRAPH Drawing palette.

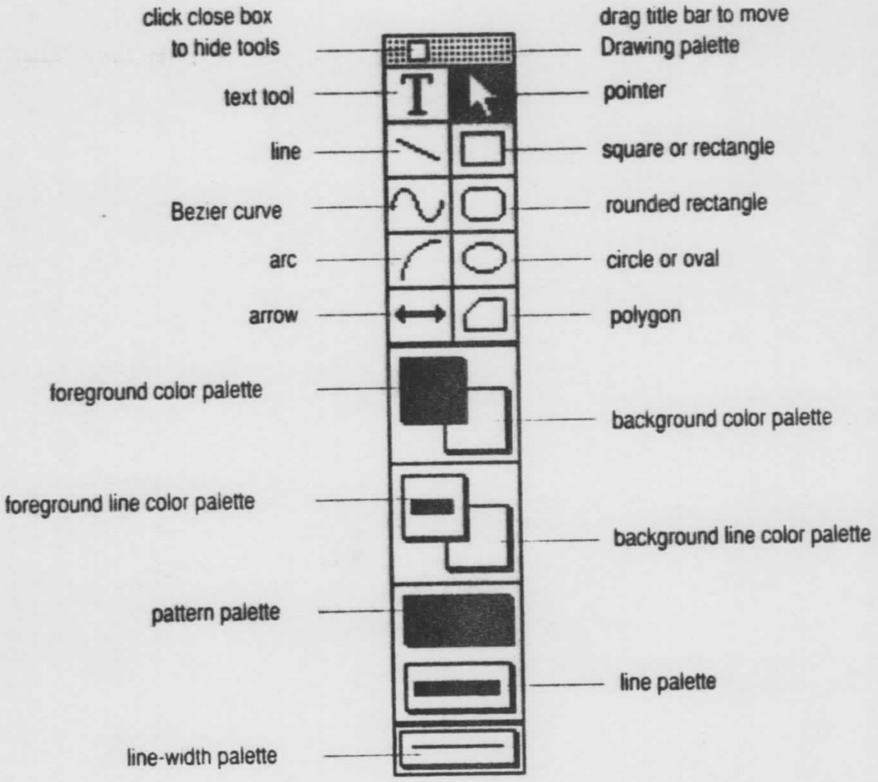


FIGURE 2-3. DELTAGRAPH DRAWING PALETTE

You can use these tools to add text and drawing objects to your chart, and to change the color, fill patterns, and line patterns of chart objects and drawing objects. Chapter 6, "Drawing in the Chart Window," gives step-by-step instructions on using these tools.

Basic Chart Elements

Table 2-3 describes the basic elements of a DELTAGRAPH chart. Figure 2-4, which follows the table, shows these elements on a two-dimensional chart.

TABLE 2-3. ELEMENTS OF A DELTAGRAPH CHART

Element	Description
Category axis	In DeltaGraph, the axis that displays the different categories of data you are charting. In a 2-D chart, the Category axis is typically the horizontal or X-axis and is associated with row labels in the Data Notebook.
Chart element	Any element such as grids, ticks, labels, axes, and data graphics in a DeltaGraph chart.
Data series	Set of values that is plotted to create a group of bars, lines, data graphics. In DeltaGraph, the default data series is a column of data. You can use the **Series** command in the Data menu to reverse this default and plot a row of data as a data series.
Data graphic	The line, bars, or other chart graphics created by a data series—the heart of the chart.
Grid lines	Lines extending from one axis to another to mark the units of measurement and make the graph easier to read.
Labels	Text describing what is measured on each axis.
Legend	A text and graphic combination showing the association of the series axis labels to the data graphic on the chart.
Series axis	In a three-dimensional chart, the axis associated with column labels. You can use the **Series** command in the Data menu to reverse this default and associate the row labels with the horizontal axis.
Tick marks	Short marks usually perpendicular to the axes to show the units of measurement.
Axis titles	In DeltaGraph, the names assigned to each axis. Axis titles are entered using the **Labels** command in the Chart menu.
Value axis	In DeltaGraph, the vertical axis created by the range of values in the column or row you are plotting as the data series.

Figure 2-4 shows the elements of a two-dimensional chart in DELTAGRAPH.

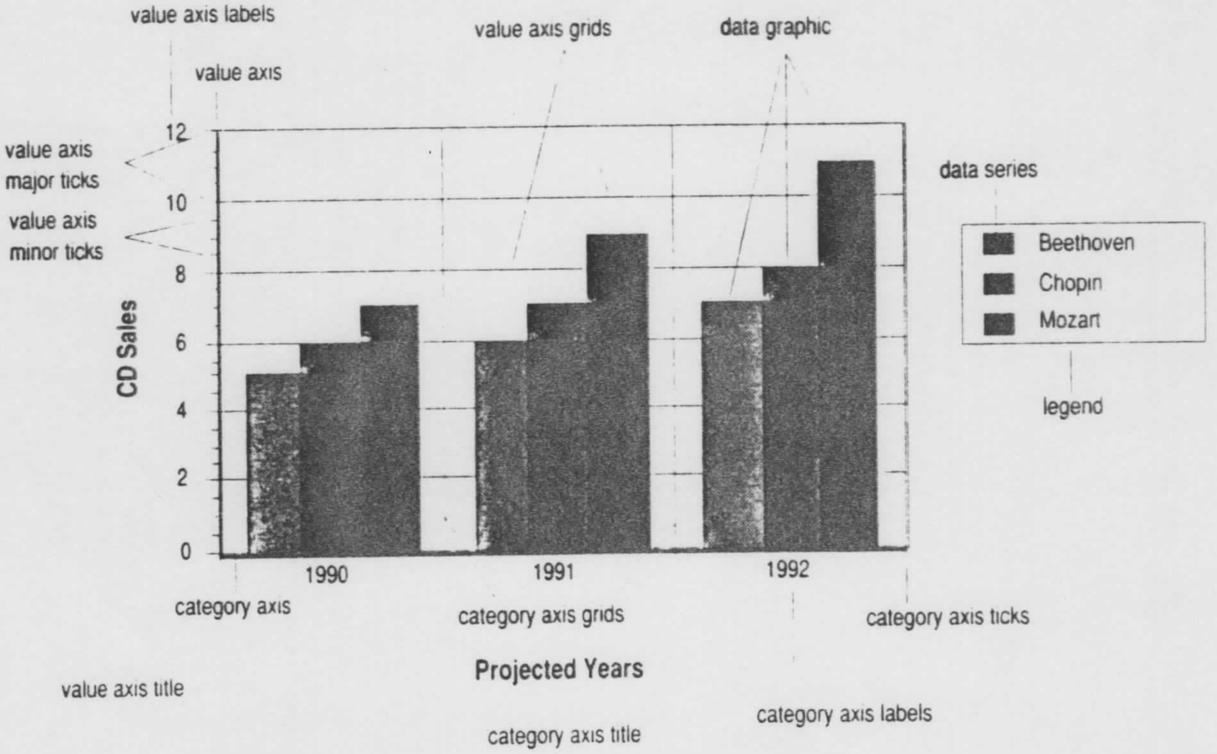


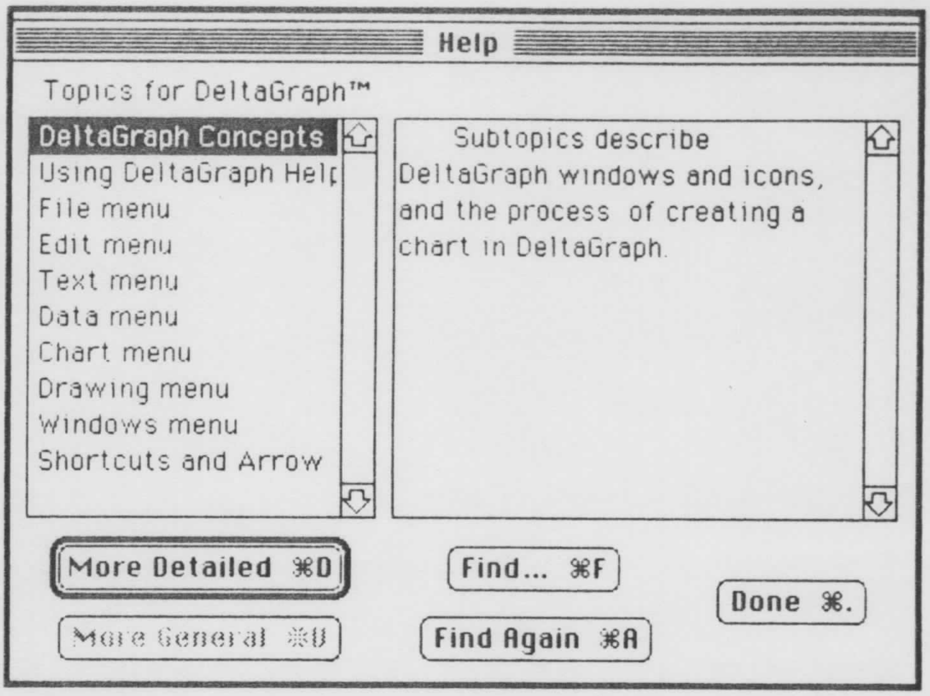
FIGURE 2-4. BASIC ELEMENTS OF A TWO-DIMENSIONAL CHART

Getting Help

DELTAGRAPH comes with a context-sensitive, on-line Help system that gives you immediate access to information about DELTAGRAPH commands.

To peruse the Help system from the beginning, you can display the initial "Help" dialog, shown below, choose "Help" from the Apple menu, or use the ⌘/ (slash) key combination.

To invoke a context-sensitive "Help" dialog, simply hold down the Command key while choosing from a menu or clicking on an icon or in a dialog.



Subtopics describe DeltaGraph windows and icons, and the process of creating a chart in DeltaGraph.

In the initial "Help" dialog, shown above, all the DeltaGraph Help topics are listed under "Topics for DeltaGraph." A brief description of the selected menu appears in the window on the right.

To obtain more detailed information about any entry in the Topics window, select the entry, then click on the More Detailed button, use the ⌘–D key combination, or double-click on the entry. The menu name and its commands appear in the Topics window. A description of the selected command appears in the window on the right.

To obtain more detailed information, click on the More Detailed button again, or double-click on the entry. To return to more general information, click on the More General button.

When there is no more detailed or more general information available, that button is dimmed.

You can use the Find... button to search for a particular term in the Help system.

To search for a term:

1. Click on the Find... button, then enter the term in the "Find" dialog. DeltaGraph selects the first occurrence of the term in the Help text, starting from the current menu or command description.

You can drag the Title bar to move the dialog away from your viewing area.

2. Click on the Find Again button to find the next occurrence of the term in the Help text. When there are no more occurrences of the term, the system beeps.

When you are finished with Help, click on the Done button to close the Help system.

Chapter 3 Working with Data

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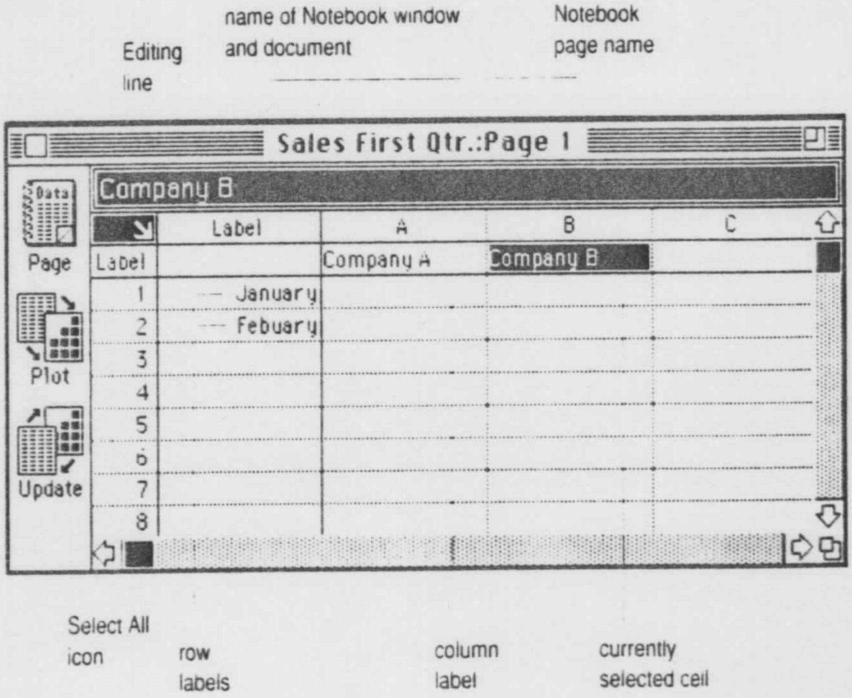
3 Working with Data

This chapter tells you how to enter and edit data in the Notebook window. See Chapter 2, "DeltaGraph Concepts," for a general discussion about Notebook pages, the Notebook and Chart windows, and the basic elements of a chart.

You can select data in the Notebook window, then use the commands in the Edit, Text, and Data menus to manipulate the data.

Entering Data

Figure 3-1 identifies the different parts of the Notebook window:



	Label	A	B	C
Label		Company A	Company B	
1	--- January			
2	--- Febuary			
3				
4				
5				
6				
7				
8				

Figure 3-1. DeltaGraph's Notebook Window

The Page, Plot, and Update icons, in the left margin of the Notebook window, are discussed in Chapter 2, "DeltaGraph Concepts."

To enter data in the Notebook window:

1. Use the mouse or arrow keys to select a cell to receive data.

   If the cell is empty, the insertion point flashes on the Editing line. The Editing line is where you first see any labels or numbers you type. When the mouse pointer moves into the Editing line, it changes to an I-beam, showing that you enter keyboard data or make changes here.

   If the cell is not empty, its contents appear (selected) on the Editing line. Anything typed in at this point will overwrite the current entry. If you only want to edit the current entry, be sure to click somewhere on the Editing line to deselect the data before making your changes

2. Type the data on the Editing line.

   If you make a mistake entering data, use the Delete key, or drag the insertion point with the mouse to highlight the incorrect characters, then type in your corrections.

3. Click the mouse button, or press Return or any arrow key to display the data in the selected cell.

   If the entry is long, you might not see all of it displayed, but it is there. See "Changing the column width" later in this chapter for information about resizing columns.

When you press Return, DELTAGRAPH automatically selects the next cell in the column. If you want to select a different cell for your next entry, use one of the arrow keys to register the entry from the Editing line. See Table 3-1 for a description of arrow key movements.

TABLE 3-1. ARROW KEY MOVEMENT IN NOTEBOOK WINDOW

Key	Movement
Left-arrow	Moves selection to left one cell, or registers entry from Editing line then selects cell to left of current selection.
Right-arrow	Moves selection to right one cell, or registers entry then selects cell to right of current selection.
Up-arrow	Moves selection up one cell, or registers entry then selects cell above current selection.
Down-arrow	Moves selection down one cell, or registers entry then selects cell below current selection.
Return	Same as down-arrow.
Tab	Same as right-arrow.
Shift–Tab	Same as left-arrow.
Shift–Return	Same as up-arrow.
Click	Selects cell under mouse pointer, or registers entry then selects cell under mouse pointer.

A Notebook page can accommodate up to 256 columns by 9999 rows of data. The horizontal and vertical scroll bars make it easy to navigate though large sets of data. The scroll bars work in the standard manner with one exception. When you drag the thumb (elevator) of the vertical scroll bar down to the bottom, DELTAGRAPH displays the 1000th row, not the last. To scroll past the 1000th row, you must enter or import more than 1000 rows of data, or click the scroll-down arrow when viewing the 1000th row. The vertical scroll bar was calibrated to 1000 rows to simplify "fine tuning" your scrolling position when working with average size data sets.

DELTAGRAPH uses the following defaults for row and column labels:

- Row labels correspond to category axis labels on two- and three-dimensional charts. If you do not enter a row label, the category remains unidentified on the chart.
- Column labels identify the data series. They appear in the legend of a two-dimensional chart, and on the series axis of a three-dimensional chart. If you do not enter your own column labels, the data series remains unidentified on the chart.

You can use the **Series** command in the Data menu to reverse these defaults.

To enter row labels:

1. Under the column heading "Label," select any cell for your first row label.
2. Enter the label on the Editing line.
3. Press Return or click the mouse button.

To enter column labels:

1. In the row labeled "Label," select any cell for your first column label.
2. Enter the label on the Editing line.
3. Press Return or click the mouse button.

Note: To enter a date (other than year only) for a column or row label, you must enter the date, then use the **Format...** command in the Data menu to set the format for each date. Otherwise, the date is displayed in the Macintosh numerical format for calculations. See "Changing the data format" later in this section for instructions.

Selecting Data

The following list contains rules for selecting data in the Notebook window:

- To select a single cell, click in the cell, or use the arrow keys, the Tab key, or the Return key to select the desired cell. The contents of the cell appears on the Editing line.

- To select a *row* of data, click on the row number in the column labeled "Label." The entire row is selected, and the row label, if any, appears on the Editing line.

- To select a *column* of data, click on the letter label above the desired column. The entire column is selected, and the column label, if any, appears on the Editing line.

- To select a group of continuous data, drag the mouse pointer across the data until the section you want is selected. The contents of the upper left-hand cell appears on the Editing line. If the data is not entirely visible in the Notebook window, keep dragging: DeltaGraph automatically scrolls the data in the window.

- To select more than one row or column, place the pointer at one end of the row numbers or column letters, then drag until the correct number of rows or columns is selected. You can select adjacent rows or columns only with this method.

- To select non-adjacent rows, columns, or blocks of data, hold down the Command key while making your selections.

- To select all data in the Notebook window, click on the Select All icon (the cell with the arrow in the upper left-hand corner of the Notebook page), or choose the **Select All** command from the Edit menu. These commands select all data in the Notebook window, including the lowest right-hand cell that contains data.

Editing Data

To edit data, you must first select the data you want to change. The contents of the upper left-hand cell of a selected row, column, or block appears on the Editing line.

When there is data in the selected cell, this data appears selected on the Editing line. At this point, anything you type will completely replace the selected characters.

To edit this entry without deleting it, you must click on the Editing line to de-select the entry, then use the Delete key, or drag the I-beam cursor across incorrect characters, to correct mistakes.

When the data is selected, you can do the following:

- Use the Delete key or drag over incorrect characters to edit the contents of a single cell on the Editing line.
- To insert an empty row, select the row you want preceded by the new row, then choose the **Insert Row** command from the Data menu. To insert more than one row, first select the same number of rows you want to insert, starting with the row you want preceded by the new rows, then choose the **Insert Row** command from the Data menu.
- To insert an empty column, select the column you want preceded by the new column, then choose the **Insert Column** command from the Data menu. To insert more than one column, first select the same number of columns you want to insert, starting with the column you want preceded by the new columns, then choose the **Insert Column** command from the Data menu.
- To delete rows, select the row or rows, then choose the **Delete Row** command from the Data menu. Existing rows move up to occupy the deleted row(s).
- To delete columns, select the column or columns, then choose the **Delete Column** command from the Data menu. Existing columns move to the left to occupy the deleted column(s).
- Use the commands in the Text menu to change the appearance of selected text in the Notebook window. See the next section for details.
- Use the commands in the Edit menu to cut, copy, paste, and clear selected data.

Note: When you paste, select the top left-hand cell of the block to receive data. Any existing data is overwritten. Refer to Chapter 9, "Menus and Commands," if you are not sure how to use the **Cut**, **Copy**, and **Paste** commands.

Changing the Appearance of Text

Use the commands in the Text menu to change the font, size, style, alignment, and color of text in the Notebook window. With the exception of the **Alignment** command, these settings apply to the whole Notebook window, not just selected data. You can use the Default, Left, Center, and Right options in the Alignment menu to change text placement in individual Notebook cells.

The default text in the Notebook window is 10-point Geneva, plain black. You can choose from all the fonts installed in your system file. The sizes that appear in outline style are installed screen fonts. For proper on-screen representation of your fonts, you should only use sizes that are currently installed in your system.

The **Drop Shadow** command is dimmed because it does not apply to the Notebook window. (This command places a drop shadow behind selected text in the Chart window.)

To change the appearance of text in the Notebook window:

1. Select the text.
2. Choose an option from one of the pop-up menus associated with the commands in the Text menu.

The text changes according to your choice.

Note: The **Set All...** command lets you change all text formatting characteristics at once.

Changing the Column Width

If you are working with long or short data entries, you can adjust the column width to a more appropriate size.

To change the column width:

↤↦

1. Place the mouse pointer on the line between two column letters, in the "Label" row. The pointer changes to the Column Width icon shown to the left.
2. Drag the column line to a new position. The cell contents are redrawn inside the new column width.

Working with Pages

You can have more than one page of data in your Notebook. The maximum number of pages is limited only by available memory. Each page accommodates up to 9999 columns and 256 rows. With multiple data pages, you can store different sets of data in one document.

You can cut and paste data between Notebook pages to combine data from different sources into one data set for experiments and projections. For example, you can take data from each of two or more pages, paste it onto a new page, then plot a chart to test a particular hypothesis.

Creating a new page

To create a new page, choose the **New Page** command from the Data menu, or press the Page icon in the upper left-hand corner of the Notebook window and choose the New Page option from the pop-up menu. DELTAGRAPH displays a new Notebook page in the Notebook window.

DELTAGRAPH gives each page the default name of "Page 1," "Page 2," "Page 3," and so forth.

Naming a Notebook page

You can name a Notebook page to help identify the data it contains.

To name a Notebook page:

1. Choose the **Page Title...** command from the Data menu. DELTAGRAPH displays the "Page Title" dialog.
2. Enter the name you want in the space provided, then click OK. The new title appears after the document name in the Title bar of the Notebook window. (If you have not saved the document, the document name is "Untitled.")

To display a list of the Notebook pages for the current document, click on the Page icon in the upper left-hand corner of the Notebook window.

To change to a different page, select that page from the Page icon pop-up menu.

To delete the current page, choose the **Delete Page** command from the Data menu. This menu item is dimmed if your document has only one page. You will also be prevented from deleting any page that contains data that is referred to by a chart.

Importing Data

The **Import** command in the File menu lets you bring data into DELTAGRAPH from other applications. You can import data only when the Notebook window is active.

You can choose from these data formats:

- Tab-Delimited Text (ASCII file, each field separated by a tab)
- Comma-Delimited Text (ASCII file, each field separated by a comma)
- WKS (from Lotus 123 compatible files)
- SYLK (Symbolic Link file format)
- Trapeze (from DeltaPoint Trapeze files)
- Excel 2.2 (Microsoft Excel 2.2 files)

Note: Most Macintosh applications create Tab-delimited text files. To determine whether a document contains data in Tab-delimited or Comma-delimited text format, use a word processing program to open the data document, then look to see if each field is separated by a comma or by a tab.

If the first row or column of the imported data contains any text, the data arrives beginning in the "Label" row and column. If the first column of the imported data is numerical, the data arrives beginning in Column A of the Notebook page.

Imported data overwrites existing data. You can choose a new Notebook page to receive data, or use a page of data that you do not want to keep.

After you import data, you might need to use the **Cut** and **Paste** commands in the Edit menu to arrange column and row labels appropriately on the Notebook page.

To import data:

1. Make sure you allow space for imported data, either by choosing a new Notebook page, or by using one you don't care about.
2. Choose the **Import** command from the File menu to display a hierarchical menu showing the data formats you can import.
3. Select the format you want. An "Open" dialog appears, displaying the document names in the current folder. If you choose Trapeze or Excel 2.2, you see the names of documents created by those applications only. (If you are importing a Trapeze document, see the following Note.)

4. Select the document to import, then click on the Open button. The data arrives on the Notebook page. You might need to rearrange it to suit your needs.

Note: When you import a Trapeze data file, the "Choose Trapeze Blocks to Import" dialog appears. Select data from the left side of this dialog, then click on the Move button. When you have selected all the data blocks you want, click OK. The data appears in the current Notebook window.

Linking Excel Data

You can create a link between an Excel 2.2 spreadsheet document and a DELTAGRAPH Notebook page. This makes it easy to update DELTAGRAPH charts when you change data in your Excel spreadsheet.

To create an Excel Link:

1. Save your Excel 2.2 document.
2. Select and copy the range of data you want to link to DELTAGRAPH.
3. Close Excel (this might not be necessary if you are running MultiFinder) and open DELTAGRAPH.
4. Activate a blank Notebook page in a new or existing DELTAGRAPH document.
5. Choose the **Link** command from the Data menu.

The **Link** command writes the selected Excel data into the Notebook, starting in the upper left-hand corner of the page and overwriting any existing data. It creates a link to the Excel file and automatically renames the current Notebook page to the title of the linked Excel document.

Once the link is established, whenever you modify and save the data in the linked Excel document, then open the DELTAGRAPH document or activate it under MultiFinder, DELTAGRAPH automatically updates the data in the linked Notebook page to reflect any changes. You must choose the **Update** command from the Data menu, or click the Update icon, to update charts with the modified data.

You can edit linked data on the Notebook page, but if you subsequently modify the Excel document and then activate the DELTAGRAPH document, your changes to the Notebook page are replaced by the link. To edit and keep your changes, **Unlink** the files.

The **Link** command changes to **Unlink** when the current Notebook page is linked to an Excel document. Choosing **Unlink** breaks the link between the Excel file and the Notebook page. The data remains in the Notebook, but DELTAGRAPH no longer automatically updates it when you change Excel data.

Note: You can create only one link per Notebook page. A link works only when the Excel file has been named and saved.

Using "DeltaGraphMacro"

The DELTAGRAPH Utilities disk includes an Excel 2.2 macro program called "DeltaGraphMacro." When loaded into Excel and run, "DeltaGraphMacro" automatically saves your Excel worksheet and copies the data selected in the worksheet to the Clipboard. If you are using MultiFinder, the macro also opens or activates DELTAGRAPH and makes the **Link** command active.

To use "DeltaGraphMacro":

1. Open the "DeltaGraphMacro" file from within Excel 2.2.

   Because you cannot edit the macro, it is locked and hidden.

2. Choose the **Run** command from the Macro menu and run "DeltaGraphMacro!AddDeltaMenu." This adds the **DeltaGraph** command to the Excel Macro menu.

3. Open the Excel worksheet and select the data you want to link to DELTAGRAPH.

4. Select **DeltaGraph** from the Macro menu, or type ⌘–D, to run the macro.

   If you are running MultiFinder, the **DeltaGraph** command saves the worksheet, copies the selected data, launches or activates DELTAGRAPH, and opens an untitled document.

5. Choose **Link** from the Data menu to link the worksheet to the DELTAGRAPH Notebook.

Page 138 of your Microsoft Excel "Functions and Macros" manual tells how to load "DeltaGraphMacro" automatically when you start Excel.

Note: "DeltaGraphMacro" is useful only if you are using MultiFinder and have enough memory to run both Excel 2.2 and DELTAGRAPH at the same time.

Exporting Data

If you want to use your DELTAGRAPH data in other applications, you can use the **Export** command in the File menu to save your data as Tab-delimited text that can be read by most other applications. DELTAGRAPH exports data in Tab-delimited text format only. You cannot export a portion of a Notebook page.

To save data as Tab-delimited text for export to another application:

1. Choose the **Export** command from the File menu, then select "Tab-delimited Text" from the hierarchical menu.

   A dialog appears, showing documents in the current folder and the default name of the document to export. The default name consists of the current document name (or "Untitled" if you have not yet saved it), the current Page name, a period, and the word "text."

2. Use the default name or enter a new name, choose your destination, then click on the Save button. The data is saved to the specified disk and folder.

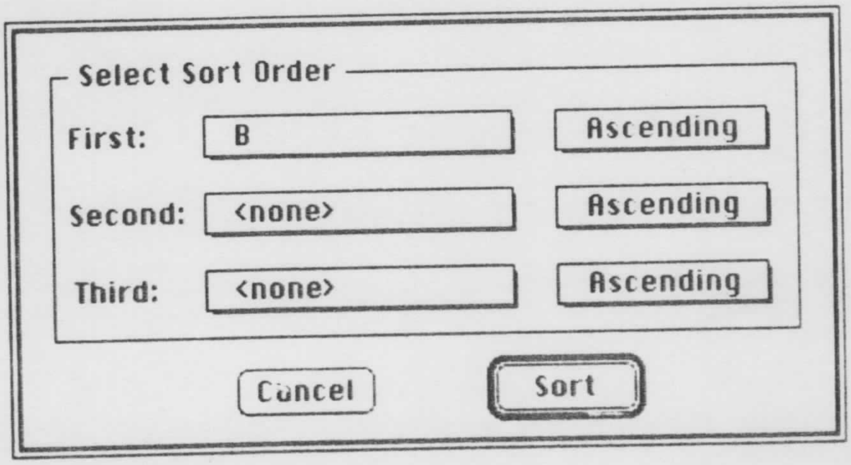
Sorting Data

You can sort any selected numbers or text in columns into ascending or descending order. DELTAGRAPH does not sort column labels in the first row labeled "Label." You can perform a secondary and tertiary sort, within the main sort, on a second and third column of data.

To sort selected data:

1. Select the column of data you want to sort.

2. Choose the **Sort...** command from the Data menu. The "Select Sort Order" dialog appears:



Select Sort Order

First: B Ascending

Second: <none> Ascending

Third: <none> Ascending

3. Click on the pop-up menu next to "First," then select the letter of the column on which to perform the sort, if it is not already selected.

4. The default order, "Ascending," shows in the pop-up menu next to the column letter. If you want to change the order, use the pop-up menu to select "Descending."

5. Click on the Sort button. The dialog disappears, and the selected data is reordered.

You can sort an unlimited number of columns if you do them individually and not relative to each other. Simply repeat steps 1 through 5 for each column of data you want to sort.

There may be times when you want to sort a second or third column of data relative to the first. For example, consider a column of labels containing last names, some of which are identical. Then consider an adjacent column containing first names. Suppose you want to put the last names in alphabetical order, and you want the first names associated with the same last names to be in alphabetical order also.

The data might look like this before you sort it:

Column A	Column B
Simpson	Jake
Jones	Jennifer
Simpson	Marion
Simpson	Mark
Davis	Sarah
Simpson	John

If you select both columns simultaneously and perform an ascending-order sort only on column A, the data looks like the following list when you are finished:

Column A	Column B
Davis	Sarah
Jones	Jennifer
Simpson	Jake
Simpson	Marion
Simpson	John
Simpson	Mark

If you select both columns simultaneously and perform a primary ascending-order sort on column A and a secondary ascending-order sort on column B, the data looks like this when you are finished:

Column A	Column B
Davis	Sarah
Jones	Jennifer
Simpson	Jake
Simpson	John
Simpson	Marion
Simpson	Mark

To sort a second column of data subject to the first:

1. Select the columns of data you want to sort.
2. Choose the **Sort...** command from the Data menu. The "Select Sort Order" dialog appears.
3. Click on the pop-up menu next to "First," then select the letter of the column on which to perform the primary sort, if it is not already selected.

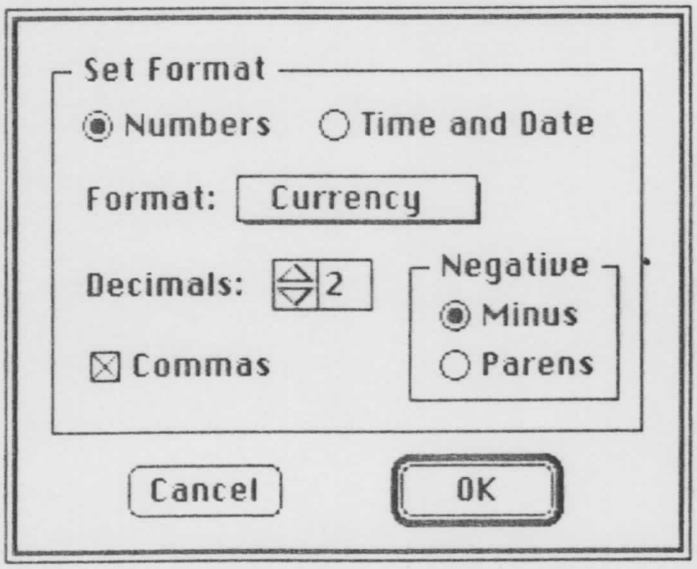
4. The default order, "Ascending," shows in the pop-up menu next to the column letter. If you want to change the order, use the pop-up menu to select "Descending."
5. Click on the pop-up menu next to "Second," then select the letter of the column on which to perform the secondary sort.
6. The default order, "Ascending," shows in the pop-up menu next to the column letter. If you want to change the order, use the pop-up menu to select "Descending."
7. Click on the Sort button. The dialog disappears, and the selected data is re-ordered according to your choices.

To perform a third sort subject to the first two, follow the procedure above, then select the third column and its order in the dialog.

Changing the Data Format

You can format numbers, times, and dates in the Notebook window to reflect the type of data you plan to chart. When you format column or row labels, the formatted labels appear on the chart. When you format data in the Notebook, it does not affect the appearance of value labels on the chart. You can use the **Format...** command in the Data menu to format value labels in the Chart window.

The **Format...** command displays this dialog:



● Numbers ○ Time and Date

Format: Currency

Decimals: 2

☒ Commas

Negative
● Minus
○ Parens

You can set the format for selected data to:

- Numbers
- Time and Date

When you set the format for "Numbers," you can choose from the following format options:

- General (shows numbers as you entered or imported them into the Notebook window; this is the default format)
- Fixed (sets a fixed number of decimal places, as specified next to "Decimals")
- Currency (places a dollar sign ($) before the number)
- Percent (Adds two zeros, and places a percent sign (%) after the number)
- Scientific (shows numbers in scientific notation)
- Engineering (shows numbers in scientific notation, with powers of 10 automatically changed to multiples of 3)

For each of these formats, you can also specify these options:

- Number of decimal places from 0 to 15
- Insert a comma every three places to the left of the decimal point
- Show negative values with minus sign or parentheses

When you set the format for "Time and Date," you can choose from the following format options:

Options for Time:

- No Time (displays date only)
- HH : MM (hours:minutes; adds am or pm after the time)
- HH : MM : SS (hours:minutes:seconds; adds am or pm after the time)
- 24 HH : MM (24-hour clock: hours:minutes; does not add am or pm)
- 24 HH : MM : SS (24-hour clock: hours:minutes:seconds; no am or pm)

Options for Date:

- No Date (displays time only)
- Short Date (1/1/90)
- Abbr. Date (Jan 1, 1990)
- Abbr. Date With Day (Monday Jan 1, 1990)
- Long Date (January 1, 1990)
- Long Date With Day (Monday January 1, 1990)
- Day-Month-Year (1-Jan-90)
- Day-Month (1-Jan)
- Month-Year (Jan-90)
- Year (1990)
- Month (January)
- Abbr. Month (Jan)
- Weekday (Monday)
- Abbr. Weekday (Mon)

To format selected data, follow these steps:

1. Select the data to format.
2. Choose the **Format...** command from the Data menu. The "Set Format" dialog appears.
3. Click on "Numbers" or "Time and Date."
4. Select your choices from the pop-up menus, enter a value if necessary, and click in the appropriate check boxes.
5. Click OK. The dialog disappears, and the selected data is formatted according to your choices. Or, you can click on Cancel to exit the dialog without changing the data.

Using Functions

You can use the **Functions...** command in the Data menu to perform operations on selected columns of data, and to fill columns of data with values, times, and dates.

The **Functions...** command displays a dialog in which you can choose a function, specify the source Notebook page and column, and specify other parameters pertinent to the function.

You can access the functions shown in Table 3-2 through the **Functions...** command.

Table 3-2. DeltaGraph Functions

Function	Description
Fill Value	Generates and writes data starting with the value you specify, incrementing by the value you specify, to fill the number of cells you specify in the destination column.
Fill Date/Time	Generates and writes times or dates starting with the time or date you specify, incrementing by the value you specify, to fill the number of cells you specify in the destination column.
Add	Adds to each value in the source column either a constant you specify or each value in the corresponding cell of one or more columns you specify, and writes the sum into the corresponding cell in the destination column.
Subtract	Subtracts from each value in the source column either a constant you specify or each value in the corresponding cell of one or more columns you specify, and writes the difference into the corresponding cell in the destination column.
Multiply	Multiplies each value in the source column by either a constant you specify or each value in the corresponding cell of one or more columns you specify, and writes the result into the corresponding cell in the destination column.

TABLE 3-2. DELTAGRAPH FUNCTIONS CONTINUED

Function	Description
Divide	Divides each value in the source column by either a constant you specify or each value in the corresponding cell of one or more columns you specify, and writes the result into the corresponding cell in the destination column.
Ln	Writes the natural logarithm of each value in the source column into the corresponding cell in the destination column.
Log	Writes the base 10 logarithm of each value in the source column into the corresponding cell in the destination column.
Exp	Writes the transcendental constant e (2.71828...) to the power of the value in the source column into the corresponding cell in the destination column.
Sin	Writes the sine of each value in the source column into the corresponding cell in the destination column.
Cos	Writes the cosine of each value in the source column into the corresponding cell in the destination column.
Power	Raises each value in the source column to the power you specify, then writes the raised value into the corresponding cell of the destination column.
Running Sum	Writes the sum of each value and all values that precede it in the source column into the corresponding cell of the destination column.
Percentage	Sums all values in the source column, determines each source value's percentage of the sum, then writes the percentage into the corresponding cell of the destination column.
Z-Score	Determines the mean of all values in the source column, calculates the deviation of each source value from the mean, and writes the difference as a number of standard deviation units into the corresponding cell in the destination column.

TABLE 3-2. DELTAGRAPH FUNCTIONS CONTINUED

Function	Description
Difference	Writes the difference between each source value and the one that follows it into the corresponding cell of the destination column.
Smoothing	Adds the current cell to a number of cells that follow it and writes the average into the corresponding cell of the destination column. You specify the number of cells to be averaged.
Filter	Selects values in the source column that fall within the parameters you specify and replaces them with a blank or specified value.
Frequency	Counts the number of times each value appears in the source column, then writes two destination columns: the first lists the source values in ascending order; the second lists the frequency of each source value.
Frequency With Bounds	Sorts the values in the source column into the bins defined in a column you specify, ignoring non-numeric source values, then writes two destination columns: the first defines the bins, the second lists the number of values per bin. Create a histogram by plotting a column chart of the destination columns.

In general, to use a DELTAGRAPH function, follow these steps:

1. Select the column to receive the results of the calculation by clicking its heading: A or B or C, and so on.
2. Choose the **Functions...** command from the Data menu. DELTAGRAPH displays the "Function:" dialog. The upper right-hand corner of the dialog shows you the current Notebook page, and the letter or label of the selected destination column.
3. Click on the box next to "Function:" to select from the pop-up menu.
4. Select the function you want to use. The dialog changes to one of six formats that show parameters specific to the function. The "Instructions"

box at the bottom of the dialog displays a message telling you what to do. The Help system can tell you what each function does.

5. Fill in the appropriate values, or click in the appropriate check boxes.
6. Click OK. (You can click Cancel to exit without changing the data in the Notebook.) The dialog closes, and the function calculates automatically.

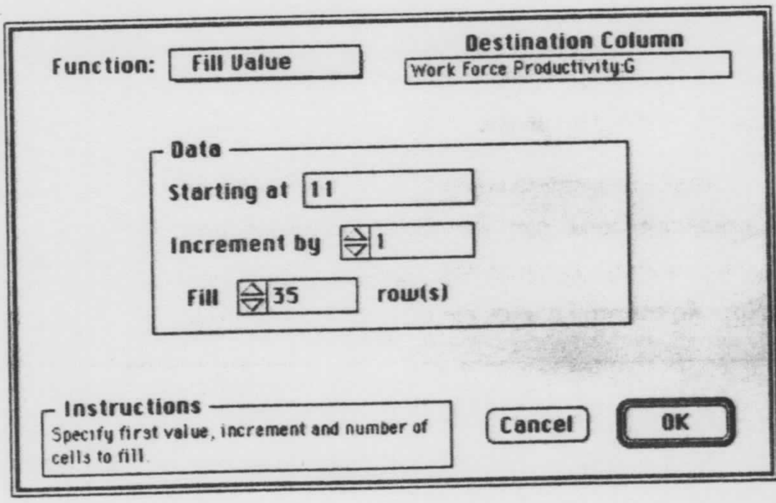
Functions calculate based on the current values of the source data. Changing the source data does not affect the numbers in columns created by functions (destination columns). When the source data changes, you must recompute the function to update the destination columns.

Note: You can click on the Update icon on the left side of the Notebook window, or choose the **Update** command from the Data menu, to update associated charts in the Chart windows.

The following sections describe the six dialog formats used by DELTAGRAPH functions. The instructions assume you have completed steps 1 and 2 for accessing functions, and that you know how to use the Cancel and OK buttons, as described in step 6 above.

Using fill functions

This is the dialog for the Fill Value function. The Fill Date/Time function also uses a dialog of this format.



Function: Fill Value

Destination Column: Work Force Productivity:G

Data

Starting at: 11

Increment by: 1

Fill 35 row(s)

Instructions

Specify first value, increment and number of cells to fill.

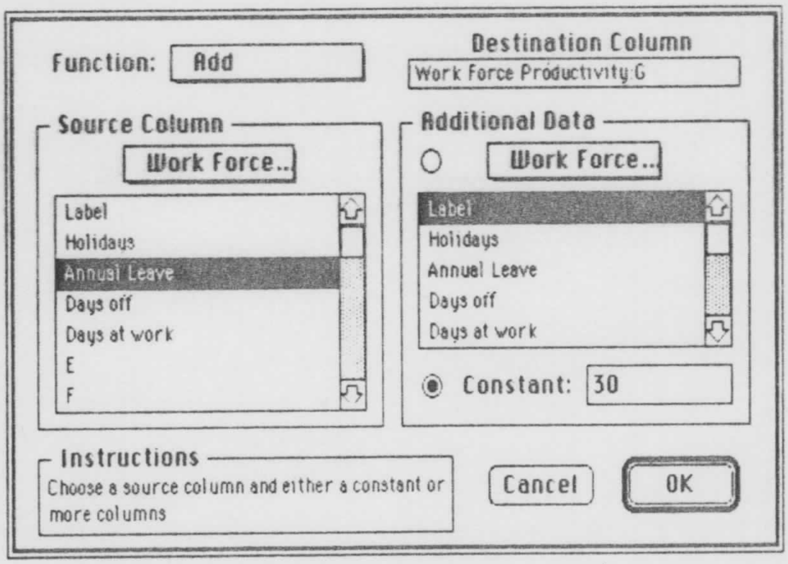
In this dialog, you specify:

- A starting value that will appear in the first cell of the destination column, by typing it in the input rectangle.

- An increment value that will be added for each subsequent cell, by typing it in the input rectangle or clicking on the direction arrows until you find the number you want.
- The number of cells to be filled with generated data, by typing it in the input rectangle or clicking on the direction arrows.

Using math functions

This is the dialog for the Add function. The Subtract, Multiply, and Divide functions also use dialogs of this format.



Function: Add

Destination Column: Work Force Productivity:G

○ Additional Data

● Constant: 30

Instructions: Choose a source column and either a constant or more columns

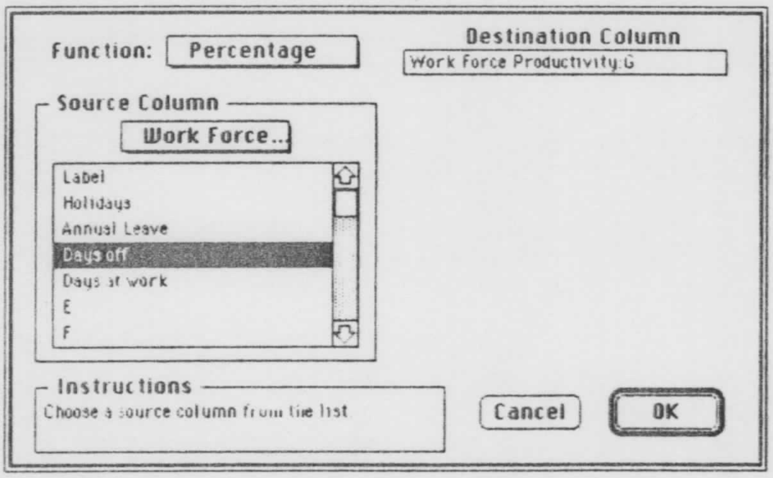
In this dialog, you specify:

- The source column, by choosing its page from the pop-up menu under "Source Column" and its label from the list box below that.
- Whether the source values should be added to another column of values or a constant, by clicking on the appropriate button.
- The constant to be added, by typing it in the input rectangle.
- The column of values to be added, by choosing its page from the pop-up menu under "Additional Data" and its label from the list box below that. You can select additional columns by holding down the Shift key when clicking on the column names.

Note: If you select more than one "Additional Data" column for any math function, the result of the first calculation becomes the source for the second, the result of the second becomes the source for the third, and so on until all selected columns are exhausted and the final result is written to the destination column. For example, if you select two "Additional Data" columns for a subtract function, the difference between the source and first "Additional Data" value becomes the minuend from which the corresponding value in the second-selected "Additional Data" column is subtracted.

Using simple functions

This is the dialog for the Percentage function. The Ln, Log, Exp, Sin, Cos, Running Sum, Percentage, Z-Score, and Frequency functions also use dialogs of this format.



Function: Percentage

Destination Column: Work Force Productivity:G

Source Column: Work Force...

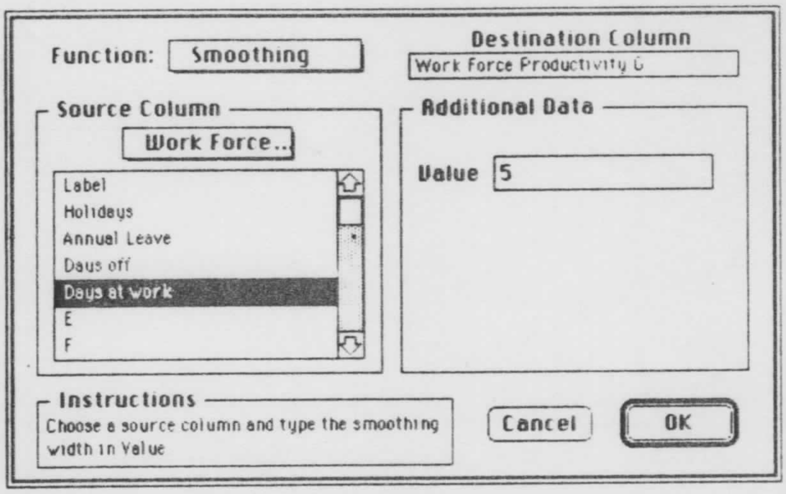
Label
Holidays
Annual Leave
Days off
Days at work
E
F

Instructions: Choose a source column from the list

In this dialog, you need only specify the source column, by choosing its page from the pop-up menu under "Source Column" and its label from the list box below that.

Using a function that requires a value

The dialog for the Smoothing function follows. The Power function also uses a dialog of this format.



Function: Smoothing

Destination Column: Work Force Productivity G

Source Column: Work Force..

Value: 5

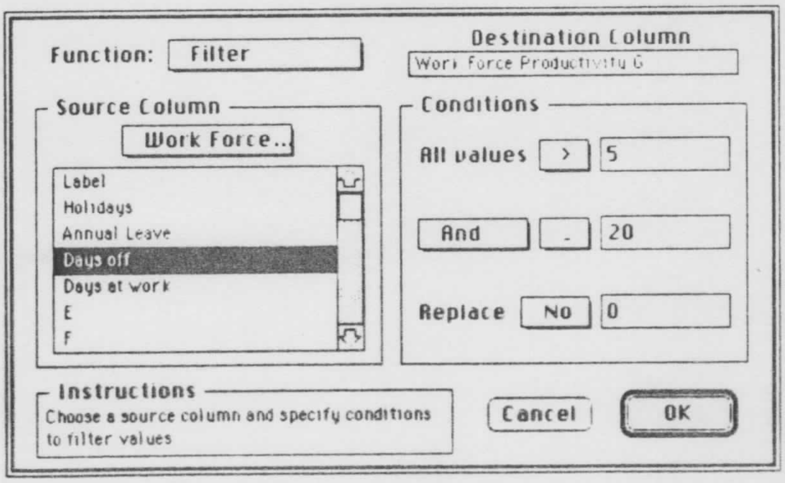
Instructions: Choose a source column and type the smoothing width in Value

In this dialog, you specify:

- The source column, by choosing its page from the pop-up menu under "Source Column" and its label from the list box below that.
- The number of cells to be included in the running average for the Smoothing function, or the power to which values in the source column should be raised for the Power function, by typing a number in the Value input rectangle.

Using the Filter function

This is the dialog for the Filter function:



Function: Filter

Destination Column: Work Force Productivity G

Source Column: Work Force..

Conditions:
All values > 5
And - 20
Replace No 0

Instructions: Choose a source column and specify conditions to filter values

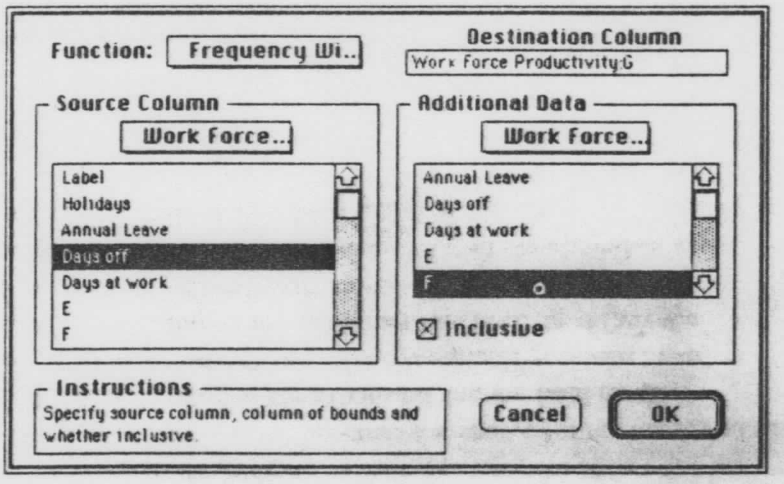
In this dialog, you specify:

- The source column, by choosing its page from the pop-up menu under "Source Column" and its label from the list box below that.
- The conditions that identify the values to be filtered, by choosing relational and boolean symbols from pop-up menus and typing values in input rectangles.
- Whether the filtered values should be replaced, with the Yes/No pop-up menu.
- The constant with which the filtered values are to be replaced, by typing the constant in the input rectangle.

Each value in the source column that meets the conditions you specify will be replaced in the corresponding cell in the destination column with either a blank or the constant you specify. Each source value that does not meet the conditions is simply copied to the corresponding cell in the destination column.

Using the Frequency With Bounds function

This is the dialog for the Frequency With Bounds function.



Function: Frequency Wi..

Destination Column: Work Force Productivity:G

Source Column: Work Force.. — Days off

Additional Data: Work Force.. — F

☒ Inclusive

Instructions: Specify source column, column of bounds and whether inclusive.

In this dialog, you specify:

- The source column, by choosing its page from the pop-up menu under "Source Column" and its label from the list box below that.

- The column that lists the boundary values for the bins, by choosing its page from the pop-up menu under "Additonal Data" and its label from the list box below that.
- Whether values that match the boundary values should be put in the lower or higher bin, by clicking on the Inclusive check box.

  For example, if the column that defines bins has three values, 1, 5, and 10, then two bins are defined: 1 through 5 and 5 through 10. If the source column contains a 5, the Inclusive option determines into which bin the 5 will fall. If Inclusive is checkmarked, the 5 falls into the lower bin. If Inclusive is not checkmarked, 5 falls into the higher bin.

Frequency With Bounds returns two destination columns. The first lists the bounds of the bins. The second lists the number of source values that fall into each bin.

Note: The Frequency With Bounds function makes it easy to create a histogram. Simply select the two columns of data created by Frequency With Bounds and plot a column chart.

Updating the Chart

Update

When you have changed data in the Notebook window, either manually or with the **Functions...** command in the Data menu, you can use the Update icon on the left side of the Notebook window, or the **Update** command in the Data menu, to automatically update the associated chart(s) without replotting the data. The **Update** command updates all charts derived from every Notebook page with modified data.

Printing Notebook Pages

Often, you will want to print the data associated with a given chart. To print a Notebook page of data, select the page, then choose the **Print...** command from the File menu.

See Chapter 8, "Printing Charts and Data," for details.

Chapter 4 Plotting Data

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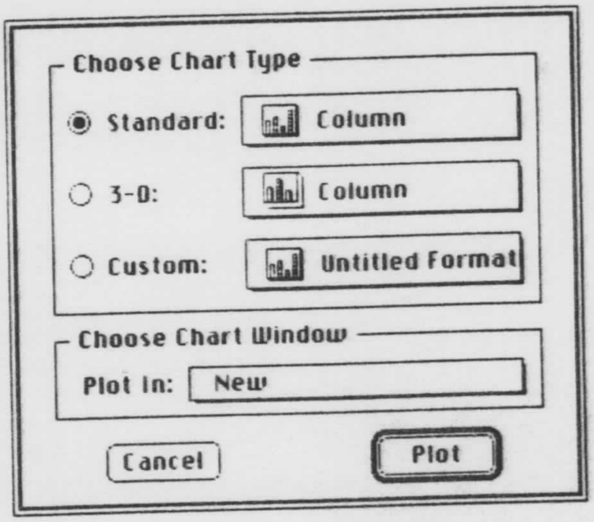
4 Plotting Data

This chapter tells you how to choose a chart type, plot selected data, change the chart type, open a custom chart, and create a custom chart. Each DeltaGraph chart type is described and illustrated.

Creating a Chart

To create a chart:

1. Select the data you want to plot.
2. Choose the **Plot...** command from the Chart menu, or click on the Plot icon on the left side of the Notebook window. DeltaGraph displays the "Choose Chart Type" dialog.



Choose Chart Type

● Standard: Column

○ 3-D: Column

○ Custom: Untitled Format

Choose Chart Window

Plot In: New

3. To see the standard and 3-D chart types, click on the the first entry in the list to display the pop-up menus of chart types.

   To see any custom charts that you or others have made, click on the first entry in the list to display the names of custom charts.

You can choose from these standard charts:

- Column
- Stacked Column
- Bar
- Stacked Bar
- Line
- Pie
- Stacked Pie
- Area
- Scatter
- Step
- Table
- High-Low
- Range
- Contour
- Polar

You can choose from these 3-D charts:

- 3-D Column
- 3-D Area
- 3-D Ribbon
- 3-D Surface
- 3-D Scatter
- 3-D Scatterline
- 3-D Wireframe

4. Select the chart you want, then release the mouse button. The chart type you selected appears next to "Standard," "3-D," or "Custom" in the dialog.
5. To specify a Chart window in which to place the graph, click on "New" under "Choose Chart Window." If there are existing Chart windows in this document, the pop-up menu displays their names.
   - Select "New" if you want to put this graph in a new Chart window.
   - Select one of the other windows if you want to add this graph to an existing Chart window.

   Your Chart window selection appears in the dialog.
6. Click on the Plot button to create the new chart, which DELTAGRAPH displays in the specified Chart window.

DELTAGRAPH Charts

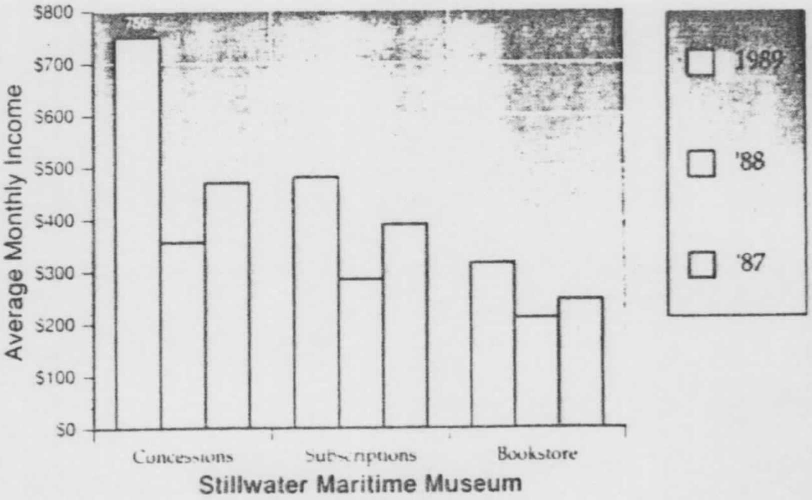
This section gives a brief explanation of the type of data most suited to each chart type available in DELTAGRAPH, followed by a sample chart and a list of the simple techniques and DELTAGRAPH options used to make the chart special.

You can refer to the "Using Options" section in Chapter 5 for a brief explanation of all the options available for each chart

Column chart

Use a Column chart to compare one item to another, or to compare different items over a period of time. Column charts effectively show large changes from one category to another.

Each column of data (data series) corresponds to one set of bars on the chart. Each value in a data series corresponds to one bar in a given category.



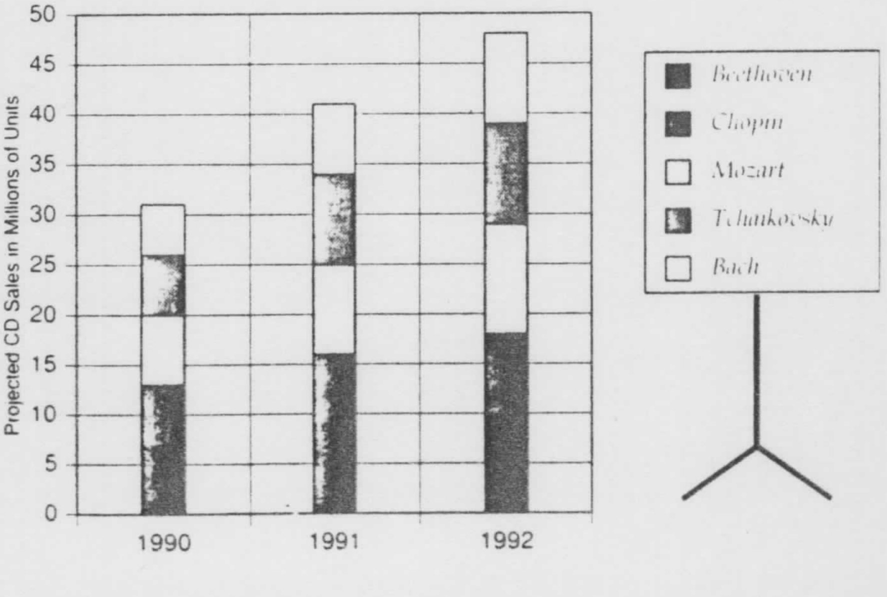
The following techniques were used to create this Column chart:

- Changed the font for category and value labels using the **Font** command in the Text menu.
- Placed the value at the top of each bar using the **Show Values...** command in the Chart menu.
- Changed values to white using the **Color** command in the Text menu.
- Created a vertical pattern fill in the legend and chart background using the **Special Fills...** command in the Drawing menu.
- Made grid lines white using the Line-pattern palette in the Drawing menu.
- Changed the aspect ratio of the chart using the axis resizing handles.
- Added value and category axis titles using the **Labels** command in the Chart menu.

Stacked Column chart

Use a Stacked Column chart to compare parts to the total, or to show how components of an item change over time.

Each column of data corresponds to one segmented column. The categories are stacked on top of one another, rather than placed side by side as in a regular or clustered Column chart.



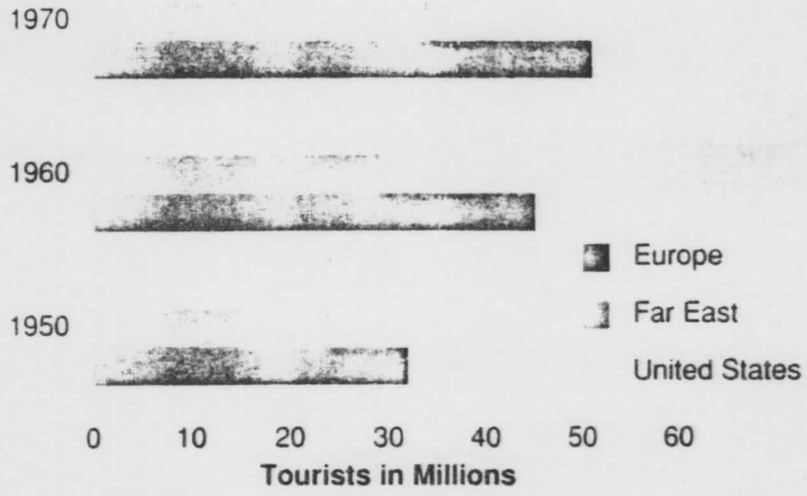
The following techniques were used to create this Stacked Column chart:

- Changed the percentages of gray shades using the Pattern palette.
- Added the music stand using the Line tool in the Drawing palette.
- Changed the bar width using the "Bar Placement" dialog, accessed through the **Options...** command in the Chart menu.
- Added a value axis title using the **Labels** command in the Chart menu.

Bar chart

Use a Bar chart to compare sizes and amounts, or to emphasize differences between items, usually at the same point in time.

Each column of data corresponds to one set of bars for a given category. Each bar corresponds to one value for a category in a data series.



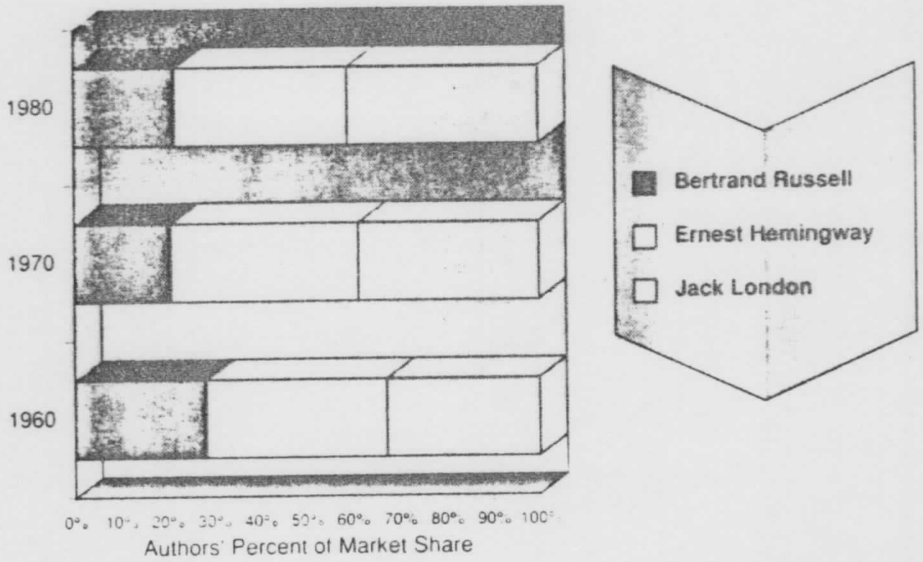
The following techniques were used to create this Bar chart:

- Changed the font for category and value labels using the **Font** command in the Text menu.
- Turned off lines for grids, ticks, data graphics, and legend by selecting the chart and choosing "None" from the Line-width palette.
- Moved the legend onto the chart background.
- Added a category axis title using the **Labels** command in the Chart menu.

Stacked Bar chart

Use a Stacked Bar chart to show how all categories in a series compare over time, or to compare parts to the total.

Each column of data corresponds to one segmented bar. Each value in a column of data corresponds to one segment in a bar. The categories are stacked on top of one another, rather than placed side by side as in a regular or clustered Bar chart.



The following techniques were used to create this Stacked Bar chart:

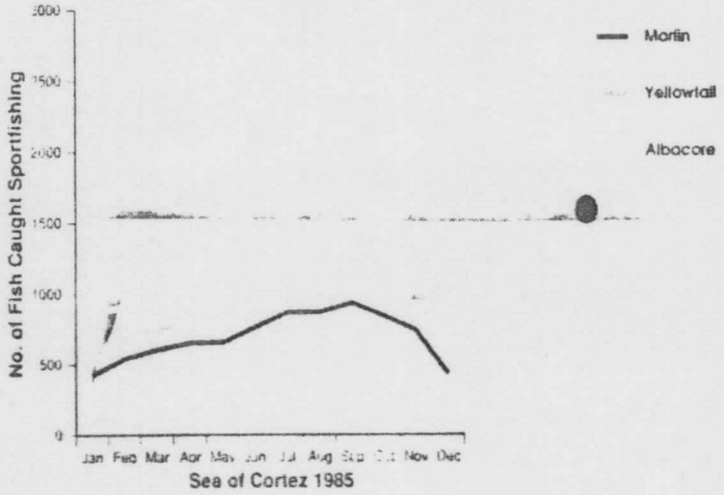
- Made a 100% Stacked Bar chart using the **Options...** command in the Chart menu.
- Changed the category labels to percent using the **Format...** command in the Data menu.
- Changed the font in the legend using the **Font** command in the Text menu.
- Made the legend transparent using the "N" (None) option in the Pattern palette and the None option in the Line-width palette.
- Created the book frame behind the legend using the polygon tool in the Drawing palette and the **Send (To Back)** command in the Drawing menu.
- Created a vertical pattern fill on the chart background and a horizontal pattern fill in the legend using the **Special Fills...** command in the Drawing menu.

- Added depth perspective using the **Depth...** command in the Chart menu.
- Added category axis title using the **Labels** command in the Chart menu.

Line chart

Use a Line chart to show the trend of one or more items over a period of time. Line charts are best when you are plotting a long series of data points.

Each column of data corresponds to one line in the chart.



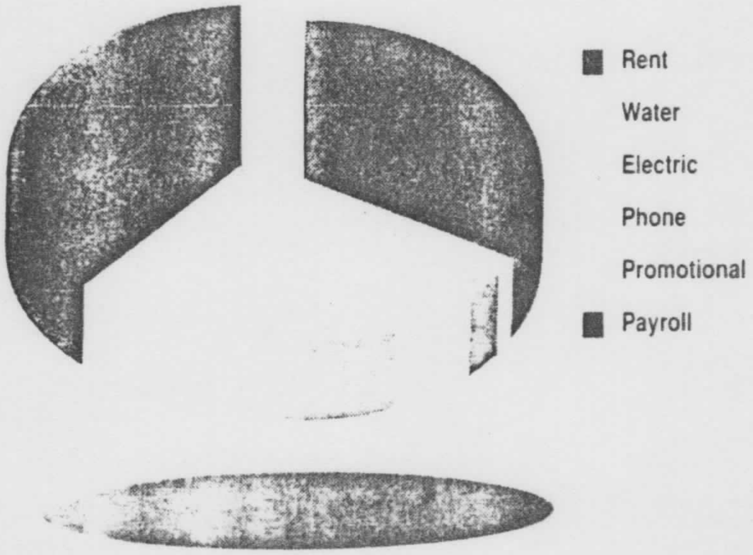
The following techniques were used to create this Line chart:

- In the Notebook window, used the "Fill Date/Time" dialog, accessed through the **Functions...** command in the Data menu, to create dates for category axis labels.
- Changed the font size using the **Size** command in the Text menu.
- Made the legend transparent using the "N" (None) option in the Pattern palette and the None option in the Line-width palette.
- Moved the legend onto the chart background by dragging.
- Made thick lines using the Line-width palette in the Drawing palette.

- Changed the line patterns using the Line-pattern palette in the Drawing palette.
- Turned grids off using the **Grids** command in the Chart menu.
- Used the Bezier Curve and Circle drawing tools in the Drawing palette to create the fish, and used the **Send (To Back)** command in the Drawing menu.
- Turned off lines around the fish using the "N" (None) option in the Line-width palette.
- Added a horizontal pattern fill to the chart background and to the fish using the **Special Fills...** command in the Drawing menu.
- Added depth perspective using the **Depth...** command in the Chart menu.
- Added category and value axis titles using the **Labels** command in the Chart menu.

Pie chart

Use a Pie chart to show the relationship of parts to the whole. This chart type uses only one column of data in the Notebook window. Each value in the column corresponds to a wedge in the pie.



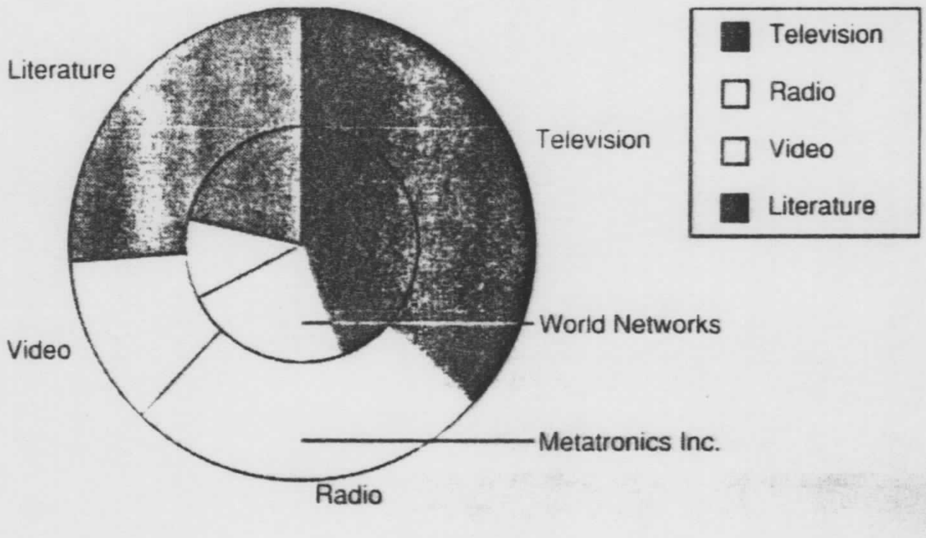
The following techniques were used to create this Pie chart:

- Exploded a pie slice by dragging it.

- Changed the fill patterns using the Fill-pattern palette.
- Changed the circle into an ellipse using the axis resizing handles.
- Rotated the chart using the **Options...** command in the Chart menu.
- Added depth using the **Depth...** command in the Chart menu.
- Turned off lines in pie and legend by selecting the chart and choosing "None" from the Line-width palette.
- Turned off labels using the **Options...** command in the Chart menu.
- Made a shadow under the pie using the Circle tool in the Drawing palette.
- Filled the shadow with a pattern from the Pattern palette.
- Turned off the pie segment lines using the None option in the Line-width palette.

Stacked Pie chart

Use a Stacked Pie chart to show the relationship of the parts to the whole for two or more data series. Each column of data corresponds to the wedges in one pie.



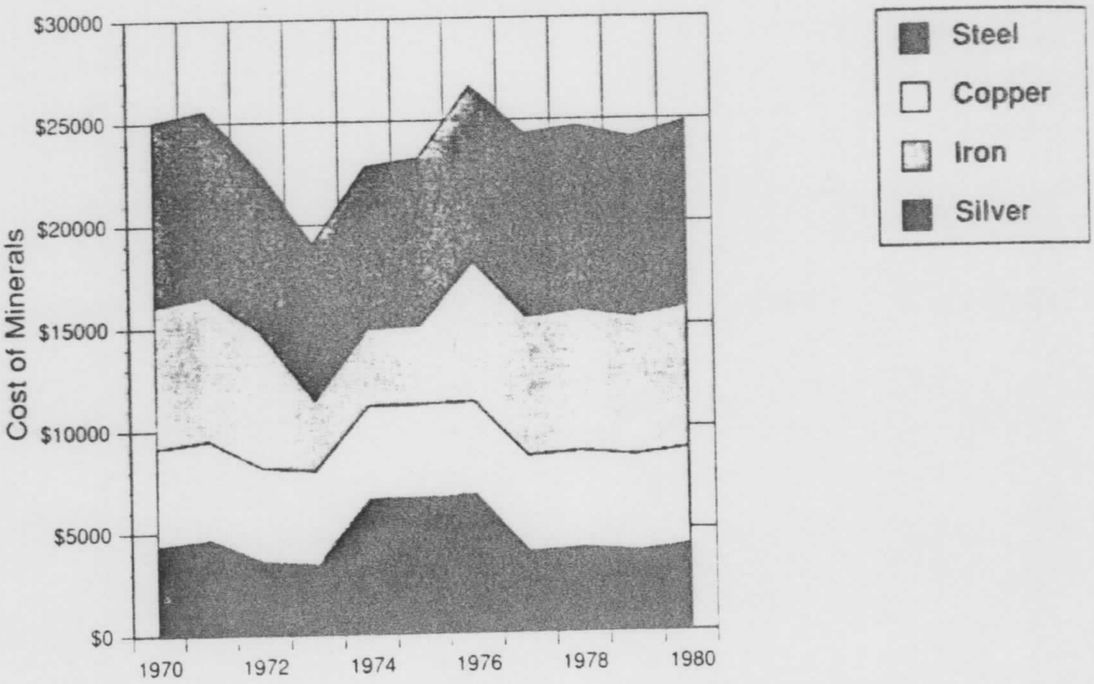
The following techniques were used to create this Stacked Pie chart:

- Made thicker lines using the Custom... option in the Line-width palette
- Changed the fill patterns using the Fill-pattern palette.

Area Chart

Use an Area chart to emphasize the volume or size of a data series, frequently over time.

Each column of data corresponds to a filled area on the chart.



The following techniques were used to create this Area chart:

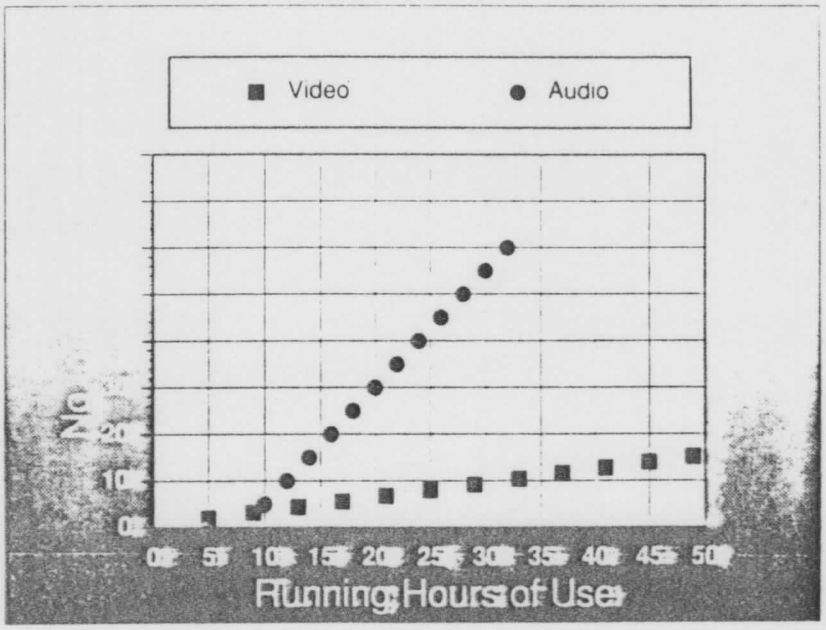
- Turned off every other category label using the **Axis** command in the Chart menu.
- Changed value labels to currency using the **Format...** command in the Data menu.
- Added a value axis title using the **Labels** command in the Chart menu.

Scatter chart

Scatter charts show data points plotted as paired sets or coordinates along the X and Y axes. Because both axes measure values, when you choose the **Axis**, **Grids**, **Ticks**, or **Labels** commands the hierarchical menus display X and Y for the axes instead of Value and Category.

The Notebook data for this chart type differs from other chart types. In a Scatter chart each data series requires two columns of data. The first column produces the values for the X coordinate points. The second column of the series produces the values for the Y coordinate points. To label each series, the label text must be placed over the first or X coordinate column of each series.

In the Chart window, you can make each point a different symbol if you want. To select an individual symbol, click to select the data set, then click again on the individual symbol. See "Changing symbols" in Chapter 5 for detailed instructions on changing chart symbols.



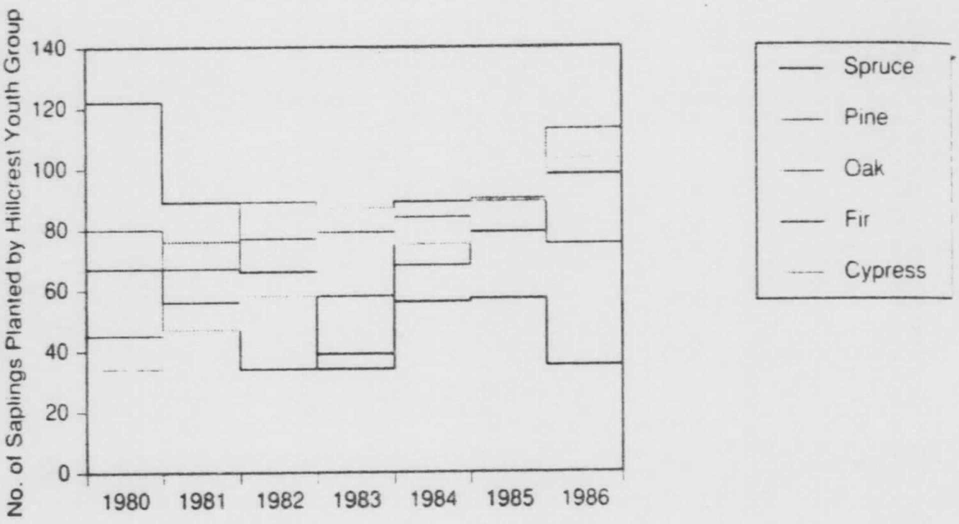
The following techniques were used to create this Scatter chart:

- Added axis titles using the **Labels** command in the Chart menu.
- Resized and moved legend to top of chart.
- Added background with Rectangle tool and Special Fill Patterns.

Step chart

Use a Step chart to compare items that do not show a trend. Step charts display discrete points along the value axis, with vertical lines showing the difference between each point.

Each column of data corresponds to one series of steps on the chart.



The following technique was used to create this Step chart:

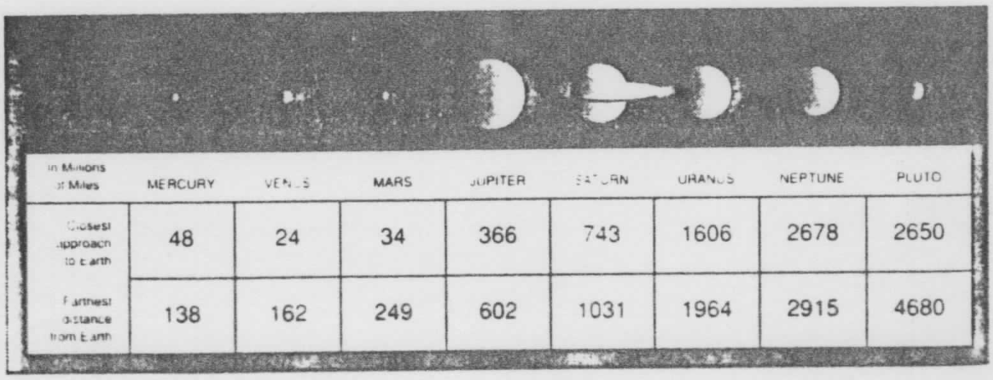
- Added a value axis title using the **Labels** command in the Chart menu.

Table chart

Use a Table chart to show precise data. Enter the table data, including the row and column labels, as you want it to appear in the Table chart.

You can use the upper left-hand cell in the Notebook window to place a title over the categories in the table.

You can also make a column wider by selecting a vertical line and dragging it.



in Millions of Miles	MERCURY	VENUS	MARS	JUPITER	SATURN	URANUS	NEPTUNE	PLUTO
Closest approach to Earth	48	24	34	366	743	1606	2678	2650
Farthest distance from Earth	138	162	249	602	1031	1964	2915	4680

The following techniques were used to create this Table chart:

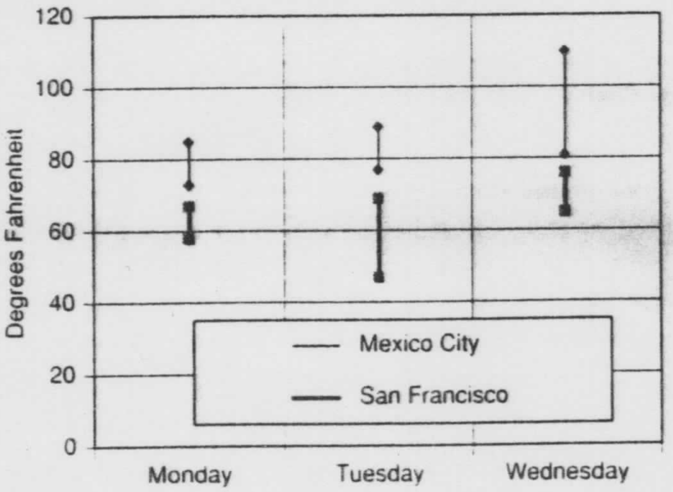
- Changed font, style, size, and alignment using commands in the Text menu.

- Turned off vertical and horizontal lines for series and category titles using the **Options...** command in the Chart menu.
- Created a background using the Square tool in the Drawing palette, and the **Send (To Back)** command in the Drawing menu.
- Adjusted spacing of Category and Series Gutters using the **Options...** command in the Chart menu.
- Magnified to 200% to create special effects.
- Created planets with the circle tool in the Drawing palette.
- Added the ring around Saturn using the Bezier tool in the Drawing palette.
- Turned lines off around planets using the None option in the Line-width palette.
- Placed a vertical pattern fill on the background using the **Special Fills...** command in the Drawing menu.

High-Low chart

Use a High-low chart to show the highs and lows for different items or different periods of time.

The Notebook data for this chart type differs from other chart types. Each data series requires two columns of data to produce a value for the high point and a value for the low point. To label each series, the label text must be placed over the first column of each series.



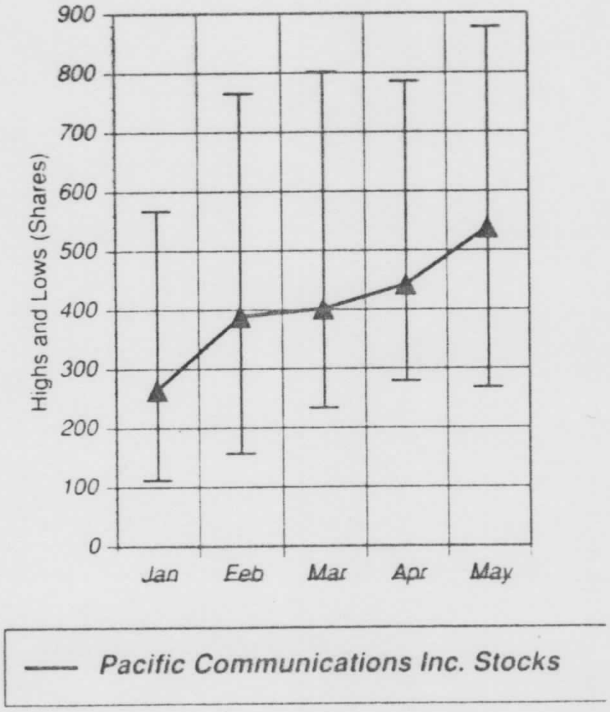
The following techniques were used to create this High-Low chart:

- Added a value and axis title using the **Labels** command in the Chart menu.
- Moved the legend onto the chart by dragging it.

Range chart

A Range chart shows the highs and lows of an item, as well as the midpoints between the two. You can make these comparisons over time.

The Notebook data for this chart type differs from other chart types. Each data series requires three columns of data. The first two columns produce values for the high and low points. The third column produces values for the midpoints. To label each series, the label text must be placed over the first column of each series.



The following techniques were used to create this Range chart:

- Changed symbols using the **Symbols...** command in the Chart menu.
- Underlined text using the **Style** command in the Text menu.

- Added a value axis title using the **Labels** command in the Chart menu.
- Moved the legend and changed the shape by dragging.

Contour chart

Use a Contour chart to show variations and relationships over three sets of values; for example, latitude, longitude, and elevation.

The Contour chart is a variation of the 3-D Surface chart. The Contour chart is two-dimensional, with the third dimension of values shown as a variation in pattern or color.

The Contour chart legend shows the range of values from the value axis.

To change the pattern or color ramp of your chart:

1. Before opening the "Options…" dialog, select the first segment of the chart legend and use the Color or Fill-pattern palette to modify the color or pattern according to how you want the uppermost data in your chart to be displayed.
2. Select the last segment of the legend and do the same for the lowest data in your chart.

   You can also select each segment of the legend and modify its color or pattern individually.
3. Open the "Options…" dialog and click on the Color Ramp or Pattern Ramp button.
4. Click on the Show button if you want to preview your selection before implementing the changes.

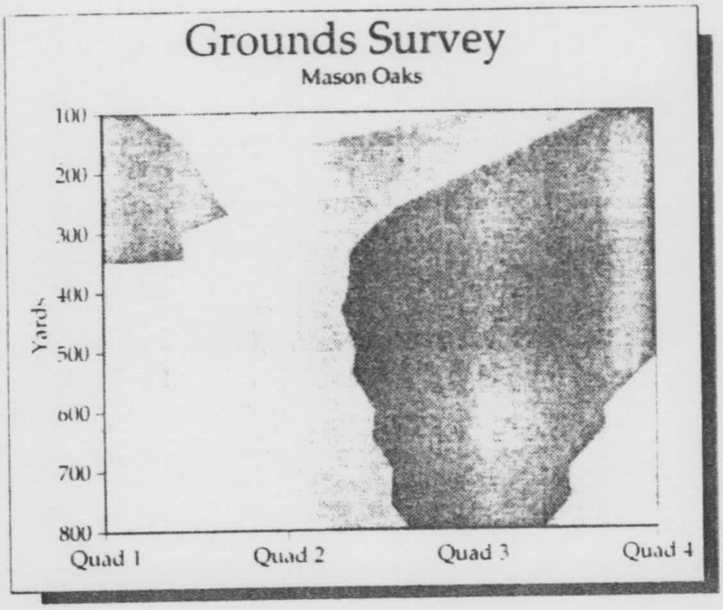
   DELTAGRAPH will create a blend of colors or patterns that range between your top and bottom selections.
5. Click OK to implement the changes, or click Cancel to exit the dialog without changing your chart.

DELTAGRAPH automatically fills in an appropriate range of colors or percentages of gray shades.

When you change one pattern or color in the legend, it changes the associated area on the chart.

You can enter category and series labels every few columns if you want to reduce the number of entries required to show labels.

You can make the curves smoother by increasing the number of minor divisions on the value axis, using the **Axis** command in the Chart menu.



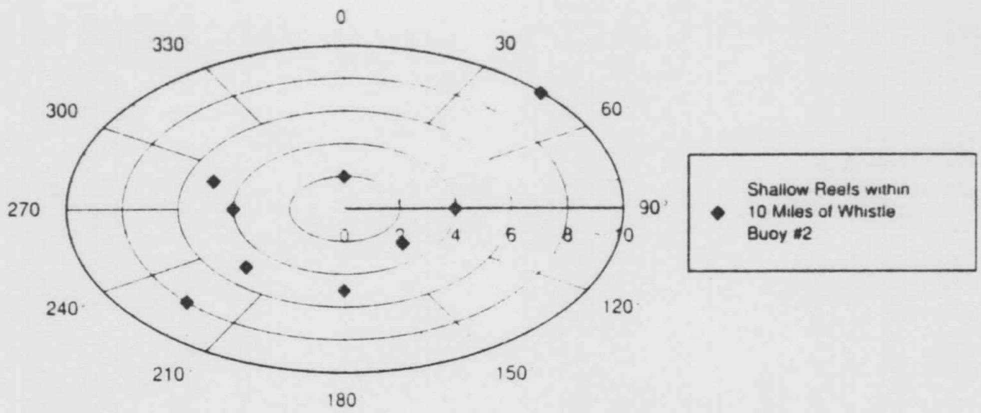
The following techniques were used to create this Contour chart:

- Added value axis title using the **Labels** command in the Chart menu.
- Changed font and size with the **Font** and **Size** commands in the Text menu.
- Added two rectangles using the Rectangle tool in the Drawing palette.
- Turned off the legend using the **Options…** command in the Chart menu.
- Changed the fill patterns of the rectangles to black and to white using the Pattern palette in the Drawing menu.
- Sent the rectangles to the back using the **Send (To Back)** command in the Drawing menu.
- Added a chart title using the Text tool in the Drawing palette.

Polar chart

Use a Polar chart to show distance from the center.

This chart calls for two columns of data in the Notebook window. The first column of data corresponds to distance from the center of the chart (X axis), and the second column of data corresponds to the number of degrees on the perimeter of the chart (Y axis). To label each series, the label text must be placed over the first column of each series.



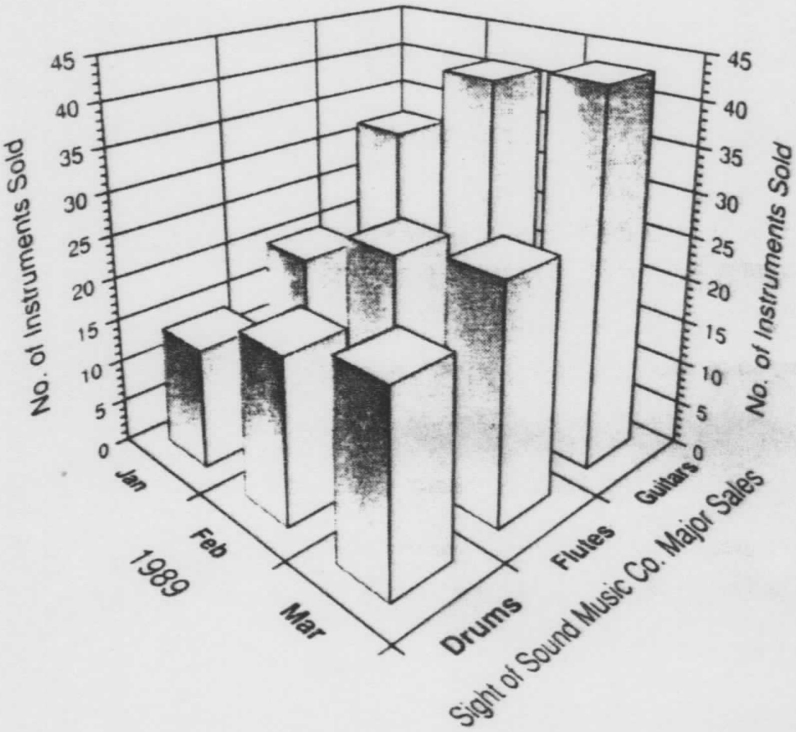
The following technique was used to create this Polar chart.

- Made the circle into an ellipse using the axis resizing handle.

3-D Column chart

The 3-D Column chart is a variation of a column chart. Use it to compare one item to another, or to compare different items over a period of time. Column charts effectively show large changes from one category to another.

Each column of data corresponds to one set of bars on the chart. Each value in a column of data (data series) corresponds to one column in a given category on the chart.

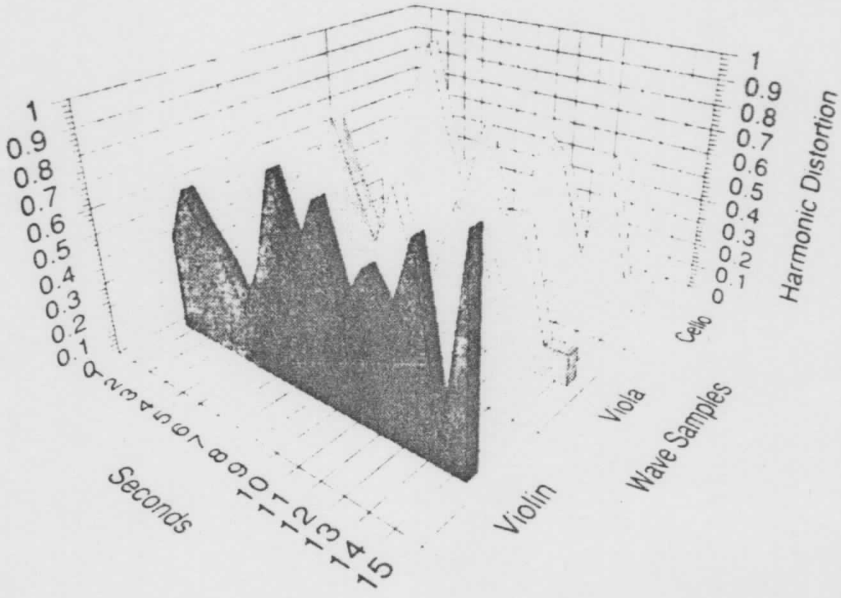


The following techniques were used to create this 3-D Column chart:

- Added vertical pattern fills to the data graphics with the **Special Fills...** command in the Chart menu.
- Changed the aspect ratio by dragging the axis resizing handles.
- Changed the perspective using the **3-D View...** command in the Chart menu.
- Added value, category, and series axis titles using the **Labels** command in the Chart menu.

D Area chart

The 3-D Area chart is a variation of a Line or Area chart. Each column of data corresponds to one filled area on the chart.

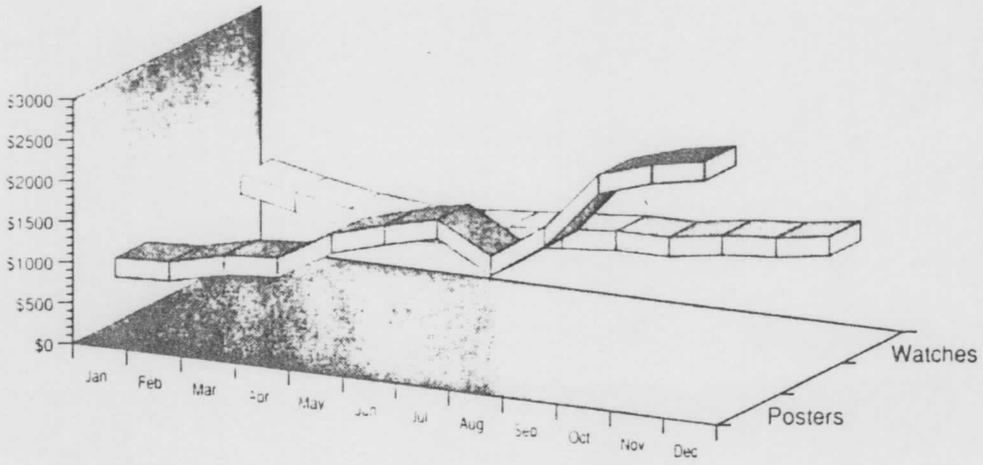


The following techniques were used to create this 3-D Area chart:

- Used the Line Width option in the **Options...** command to make the areas thinner.
- Changed the aspect ratio by dragging the axis resizing handles.
- Changed the perspective using the **3-D View...** command in the Chart menu.
- Added value, category, and series axis titles using the **Labels** command in the Chart menu.

3-D Ribbon chart

The 3-D Ribbon chart is a variation of a Line chart. Each column of data corresponds to a ribbon on the chart. You can use this chart type to show trends.



The following techniques were used to create this 3-D Ribbon chart:

- Made the ribbons wider using the Ribbon Size tool, accessed through the **Options...** command in the Chart menu.
- Removed one back plane using the Back Planes tool in the **Options...** command.
- Changed the value labels to currency with the **Format...** command in the Data menu.
- Created a vertical pattern fill on the side plane and a horizontal pattern fill on the bottom plane using the **Special Fills...** command in the Drawing menu.

3-D Surface chart

The 3-D Surface chart is a variation of a Contour chart. Use a 3-D Surface chart to show variations and relationships over three sets of values; for example, latitude, longitude, and elevation.

To change the pattern or color ramp of your chart:

1. Before opening the "Options..." dialog, select the first segment of the chart legend and use the Color or Fill-pattern palette to modify the color or pattern according to how you want the uppermost data in your chart to be displayed.

2. Select the last segment of the legend and do the same for the lowest data in your chart.

   You can also select each segment of the legend and modify its color or pattern individually.

3. Open the "Options…" dialog and click on the Color Ramp or Pattern Ramp button.

4. Click on the Show button if you want to preview your selection before implementing the changes.

   DELTAGRAPH will create a blend of colors or patterns that range between your top and bottom selections.

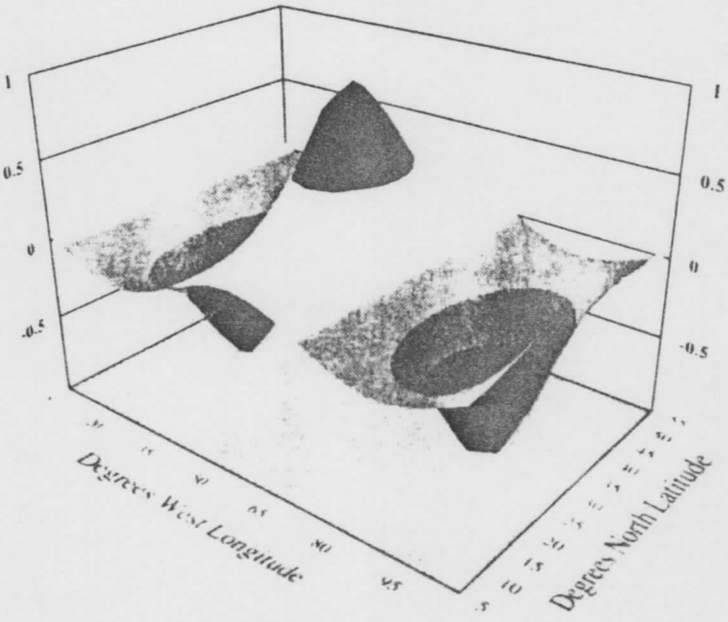
5. Click OK to implement the changes, or click Cancel to exit the dialog without changing your chart.

DELTAGRAPH automatically fills in an appropriate range of colors or percentages of gray shades.

When you change one pattern or color in the legend ramp, it changes the associated area on the chart.

You can enter category and series labels every few columns if you want to reduce the number of entries required to show labels.

You can make the curves smoother by increasing the number of minor divisions on the value axis, using the **Axis** command in the Chart menu.



The following techniques were used to create this 3-D Surface chart:

- Added category and series titles using the **Labels** command in the Chart menu.
- Changed the perspective using the **3-D View...** command in the Chart menu.
- Turned off the legend using the **Options...** command in the Chart menu.
- Changed the font using the **Font** command in the Text menu.

3-D Scatter chart

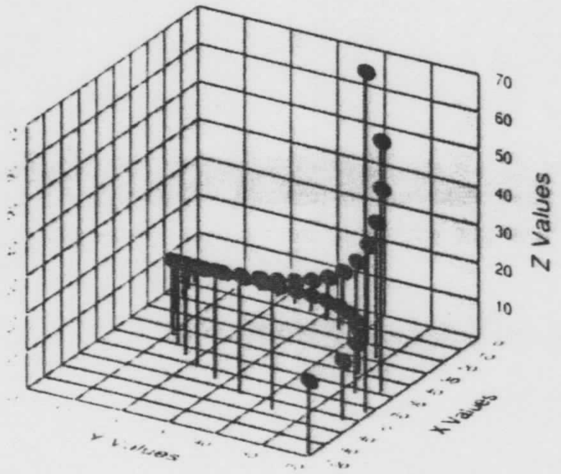
The 3-D Scatter chart plots data points created by the intersection of 3 different coordinate values. Those points are connected to one of the chart planes with a drop line. Each of the three values that make up a point corresponds to a particular axis in a 3-Dimensional grid. The Z axis is the vertical axis. The X axis is the leftmost horizontal axis. The Y axis is the rightmost horizontal axis.

Note: On a 3-D chart the axes are the three lines that intersect in the back of the chart. They are not the lines where the axis labels appear.

All of the axes on a 3-D Scatter chart measure values: for example, the frequency, amplitude, and phase of an electrical signal. When you choose the **Axis, Grids, Ticks,** and **Labels** commands for this chart, the options are X, Y, and Z, rather than Value, Category, and Series.

The Notebook data for this chart type differs from other chart types. Each data series requires three columns of data, the first column produces the values for the X coordinate points. The second column produces the Y coordinate points, and the third column produces the Z coordinate points. Each data point represents a measurement that is the intersection of the three values in a row.

Each data series in a 3-D Scatter chart is represented by a different set of symbols with drop lines to one of the three chart planes. To label each series, the label text must be placed over the first column of each series.



The following technique was used to create this 3-D Scatter chart:

- Added axis titles using the **Labels** command in the Chart menu.
- Changed the perspective using the **3-D View...** command in the Chart menu.

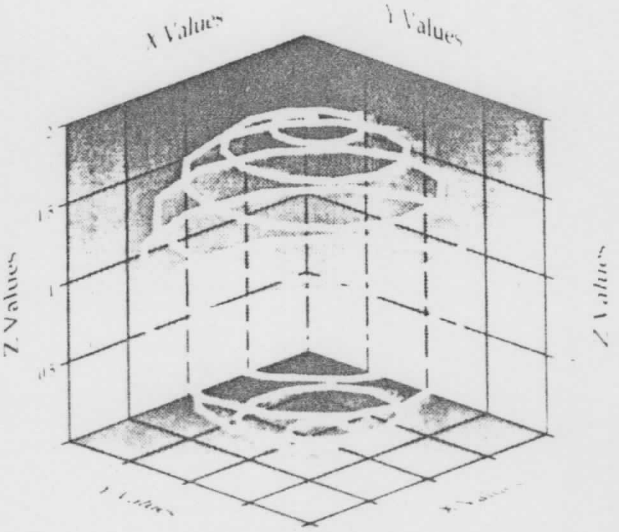
3-D Scatterline chart

The 3-D Scatterline chart is a variation of the 3-D Scatter chart, except that it connects the data points by a line, as in "connect-the-dots." This chart measures something that moves in space as a function of time; for example, a satellite orbiting earth. The chart shows a path of contact points along an implied time line represented by the position of the points along the line.

All of the axes on a 3-D Scatterline chart measure values. When you choose the **Axis**, **Grids**, **Ticks**, or **Labels** command for this chart, the options are X, Y, and Z, rather than Value, Category, and Series.

The Notebook data for this chart type differs from other chart types. Each data series requires three columns of data, the first column produces the values for the X coordinate points. The second column produces the Y coordinate points, and the third column produces the Z coordinate points. Each data point represents a measurement that is the intersection of the three values in a row.

Each data series in a 3-D Scatterline chart is represented by a continuous line. To label each series, the label text must be placed over the first column of each series.

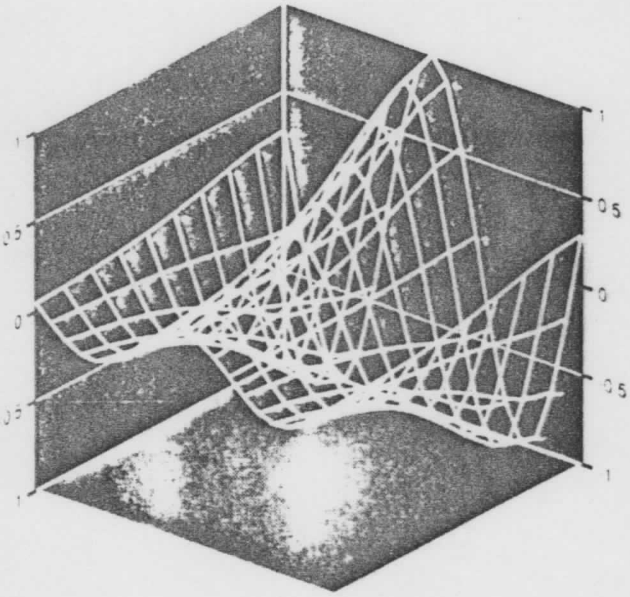


The following techniques were used to create this Scatterline chart:

- Added X, Y, and Z axis titles using the **Labels** command in the Chart menu.
- Added vertical pattern fill to back planes using the **Special Fills...** command in the Drawing menu.
- Changed the line to white by selecting it and choosing solid white from the Line-pattern palette.

3-D Wireframe chart

The 3-D Wireframe chart is a variation of the 3-D Surface chart. It connects the various data points with a grid-like "wireframe" of lines. A wireframe is suitable for showing 3-dimensional changes in an object or over time.



The following technique was used to create this 3-D Wireframe chart:

- Added axis titles using the **Labels** command in the Chart menu.
- Added solid and special patterns to back planes and changed lines to white.

Changing the Chart Type

To change the chart type without replotting from the Notebook window, select the chart, then choose the **Change Type...** command from the Chart menu.

DeltaGraph displays the "Change Chart Type" dialog. Use this dialog exactly like the "Choose Chart Type" dialog described in the beginning of this chapter. You cannot, however, choose a different Chart window from this dialog.

Certain chart types are incompatible and cannot be interchanged. Incompatible chart types are dimmed in the "Change Chart Type" dialog so that you cannot select them.

Making a Custom Chart

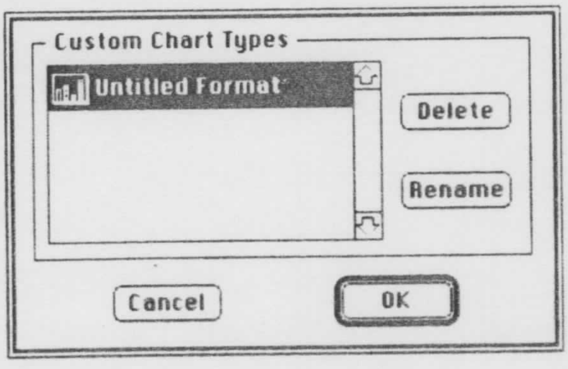
DeltaGraph lets you name and save chart formats using the **Custom...** command in the Chart menu. For example, suppose you make a bar chart and set the font, size, color, and style for all the labels on the chart. You choose colors and patterns you like for each data series, and you also set the grids, ticks, and axes a certain way.

After all this effort, you do not want to redo the same operations for your next chart, so you create a custom chart to contain all the formatting information. When you plot your next chart, you can choose your custom chart from the "Choose Chart Type" dialog, and the new data appears in a chart with your favorite formatting already in place.

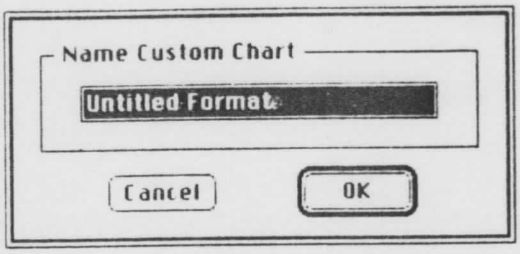
Custom charts are stored in a special document, named DeltaGraph Library, and placed in the DeltaGraph folder or the System folder.

To create a custom chart:

1. Plot a chart and format it the way you like.
2. Click on the chart to select it.
3. Choose the **Custom...** command from the Chart menu. DeltaGraph displays the "Custom Chart Types" dialog. This dialog displays the chart-type icons and names of any existing custom charts in the DeltaGraph folder. It also displays an entry called "Untitled Format."



4. Click on the Rename button. DeltaGraph displays the "Name Custom Chart" dialog, with "Untitled Format" selected.



Name Custom Chart

Untitled Format

5. Type a name for your custom chart, then click OK. The new name appears in the "Custom Chart Types" dialog.

6. If the name is satisfactory, click OK. The custom chart name now appears in the "Custom" list when you choose the **Plot...** or **Change Type...** commands. Click Cancel to exit the dialog without saving the custom chart.

Renaming a custom chart

To rename a custom chart:

1. Choose the **Custom...** command from the Chart menu.

2. Select the chart you want to rename from the list in the "Custom Chart Types" dialog, then click on the Rename button.

3. Type the new name in the "Name Custom Chart" dialog, then click OK.

Deleting a custom chart

To delete a custom chart:

1. Choose the **Custom...** command from the Chart menu.

2. Select the chart you want to delete from the list in the "Custom Chart Types" dialog, then click on the Delete button. The name disappears from the dialog and from the DeltaGraph Library document.

Chapter 5 Editing Your Chart

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5 Editing Your Chart

This chapter tells you how to edit and format the charts you create in DeltaGraph.

You can select parts of the graph in the Chart window, then use the tools in the Drawing palette and the commands in the Text menu to change colors, patterns, line width, and text characteristics of selected elements.

You can use the commands in the Chart menu to show and hide grids; change axes, tick marks, labels, and symbols; and add axis titles to your graphs. You can add depth to two-dimensional charts, change bar width and placement, show values on data graphics, and add Error bars to certain charts. You can also alter the 3-D view of a three-dimensional chart.

Naming a Chart Window

DELTAGRAPH automatically gives Chart windows the default names "Chart Window #1," "Chart Window #2," and so forth. You can assign your own names to Chart windows to help identify their contents. The Chart window title can contain up to 31 characters. All the Chart window names associated with a document will appear at the bottom of the Windows menu when the document is open.

To name a Chart window:

1. Choose the **Chart Window Title...** command from the Windows menu. You see the "Chart Window Title" dialog.
2. Enter a name for your Chart window to replace the default name, then click OK. The new name appears in the Windows menu.

To rename a Chart window, simply repeat steps 1 and 2. The new name now appears in the Windows menu, replacing the previous name.

Selecting Parts of the Chart

Before you can change the colors, patterns, line width, and text characteristics of the chart elements you must select the appropriate element in the Chart window. You can also change the shape and size of the chart using the axis resizing handles (large squares at axis ends).

To select the whole chart:

1. Click on the Pointer icon in the Drawing palette, if it is not already selected.
2. Click anywhere on the chart.
   - Object handles (small squares) appear to show the whole chart is selected. The legend is part of the chart. To move it separately you must select it separately, as a chart element.
   - Axis resizing handles (large squares) also appear. Two-dimensional charts show two axis resizing handles. Three-dimensional charts show three axis resizing handles.

Note: When the whole chart is selected, you can move it by placing the pointer in the chart, then dragging it to a new location. You can also change all the line widths and text font, size, style, color, and drop shadow characteristics at the same time. If you change a pattern or color when the whole chart is selected, *all* the chart elements change to that pattern or color.

To select a chart element:

1. Be sure the whole chart is selected.
2. Click on the chart element you want to select. Small circles appear to show that the element is selected.
3. To select the legend, click on the legend border. Small circles appear at each corner to show that the legend is selected.

If the chart element you select is part of a group, such as axis labels, tick marks, legend text, or legend and data graphics, the whole group is selected. To select only one element in a group, click again on the element.

To select multiple chart elements:

To select more than one chart element at the same time, use the ⌘–Click key combination. (Hold down the Command key when you click to select the elements.)

In two-dimensional charts, you can select these elements in the Chart window:

- whole chart
- value axis labels
- category axis labels
- legend
- legend labels
- legend graphics (bar, line, etc.)
- data graphic with legend graphic (bar, line, etc.)
- lines surrounding data graphics in a series
- value axis
- category axis
- value grids
- category grids
- value and category tick marks
- value tick marks
- category tick marks
- back plane
- bottom or top depth plane
- side depth plane
- bottom or top of data graphics

In three-dimensional charts, you can select these elements in the Chart window:

- whole chart
- back planes
- legend
- legend labels
- legend graphics
- data graphic with legend graphic
- value axis labels
- category axis labels
- series axis labels
- tops of data graphics in a series
- right sides of data graphics in a series
- left sides of data graphics in a series
- lines surrounding data graphics in a series
- value axis
- category axis
- series axis
- value grids
- category grids
- series grids
- value tick marks
- category tick marks
- series tick marks

When a data graphic is selected, the lines creating the graphic are also selected. To change the fill color or pattern, use the Fill-color and Fill-pattern palettes. To change the lines, use the Line-pattern and Line-width palettes. See the sections later in this chapter on using lines, fill patterns, and fill colors to learn how to do this.

Editing Text

You can change the font, size, style, and color of text labels on the chart. You can also add a drop shadow to text labels. You can use the **Alignment** command in the Text menu to change text placement in Table charts.

To change the appearance of text in a chart:

1. Select the whole chart.
2. Click on a text element in the group you want to change. If you want to change just one element, click again on that element.
3. Choose a command from the Text menu.

The text changes according to your choice.

The default text is 12-point Geneva, plain black. You can choose from all the fonts installed in your system file. The sizes that appear in outline style are installed screen fonts.

You can use the **Set All...** command in the Text menu to set text characteristics for the whole chart.

The **Drop Shadow** command alternates between on and off. Choose the **Drop Shadow** command to add a drop shadow to selected text; choose it again to remove the drop shadow from selected text.

Resizing the Chart

You can use the axis resizing handles (large squares) to resize a chart.

You can resize two-dimensional charts along one axis at a time, or along both axes at the same time, by dragging either resizing handle.

You can resize three-dimensional charts only along the axis you are dragging. Resizing does not affect the perspective of a three-dimensional chart.

To change the chart size:

1. Select the chart.
2. Drag one of the large squares.

When you drag one of the axis resizing handles in a two-dimensional chart, DELTAGRAPH displays a dotted outline to show you the new size and shape.

In a three-dimensional chart, DELTAGRAPH displays a dotted line extending from the bottom intersection of the three axes to the mouse pointer. This dotted line shows you the amount of stretching or shrinking you can expect when you release the mouse button.

Note: The **View Size** command in the Windows menu makes a chart larger or smaller on the screen only, and does not affect the printed page.

Keyboard shortcuts

You can use the following key combinations to assist you when resizing or moving a chart:

⌘–Drag	Constrains the chart to the initial direction of movement when resizing or moving.
⌘–. (period)	Cancels an operation.
Shift–Drag	Constrains the chart's object handles to a square when resizing.
Shift–OK	In dialogs, makes the change but does not redraw the chart until you click OK. Useful when working on large or complex charts that take a long time to recalculate and redraw.
Option–Drag	Temporarily turns off "Snap to Grid" when resizing or moving a chart.

Changing Lines

DeltaGraph line widths are set in points. (One point is 1/72 of an inch.)

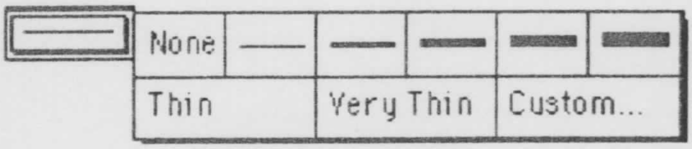
You can change the line width of the following:

- axes
- grids
- tick marks
- data graphics

To change the line width:

1. Select the line you want to change.
2. Select the Line-width palette to display the pop-up menu.

   You see a choice of line widths including "None," "Thin" (0.5 points), "Very Thin" (0.25 points), 1 through 5 points, and "Custom...."



3. Select your choice. The selected line changes accordingly.

To specify a custom width, select "Custom...." DeltaGraph displays the "Set Pen Weight" dialog. Use the direction arrows to scroll through the available sizes, or enter a number from 0 to 8.

You can also enter decimal sizes. The decimal size is accurate to two decimal places.

Changing Fill and Line Patterns

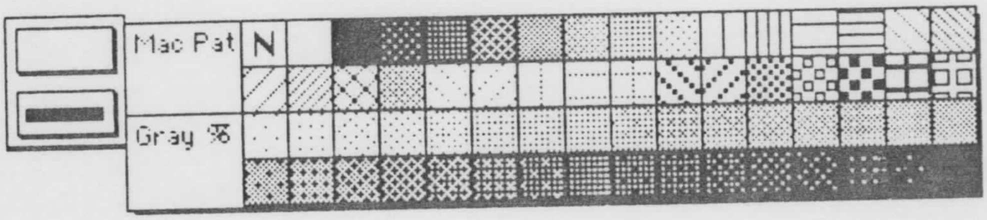
You can change the fill pattern of data graphics, such as bars, columns, areas, and pie slices. You can change the line pattern of lines.

The legend graphic changes automatically as you change the chart graphic associated with it.

The Drawing palette shows two rectangular icons for changing fill patterns. The first rectangle shows the current fill pattern of a selected element, or, if nothing is selected, solid white. If several elements with different patterns are selected, the rectangle also shows white. This Fill-pattern palette affects the fill pattern of a selected chart element.

The second rectangle shows a thick line inside. The thick line shows the current pattern of a selected line, or, if nothing is selected, solid black. This Line-pattern palette affects the pattern of a line.

The same patterns are available in the Fill-pattern and Line-pattern palettes, as shown here.



The top two rows show Macintosh patterns. The bottom two rows show percentages of gray-scale patterns. The gray-scale patterns range from 3.125% gray to 100% gray (black) in 3.125% increments.

Notice that the first pattern box contains an "N." Choose "N" to show *no pattern*. This makes an object transparent.

The second pattern box contains solid white. Solid white changes a line or surface to solid white.

The third pattern box contains solid black. On a monochrome monitor, solid black changes the fill pattern of a selected line or surface to black. However, on a color monitor, selecting the black pattern changes the selected line or surface to the current foreground color. See "Working with color" later in this chapter for more information.

To change the fill pattern of a chart element:

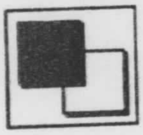
1. Select the element.
2. Select the Fill-pattern palette, then select the pattern or gray scale you want from the pop-up menu. The selected element changes accordingly.

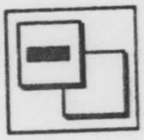
To change the line pattern:

1. Select the line.
2. Select the Line-pattern palette, then select the pattern or gray scale you want from the pop-up menu. The selected line changes accordingly.

Note: You cannot change the pattern of a line that has a line-width setting of "None" or a custom pen weight of zero.

Working with Color



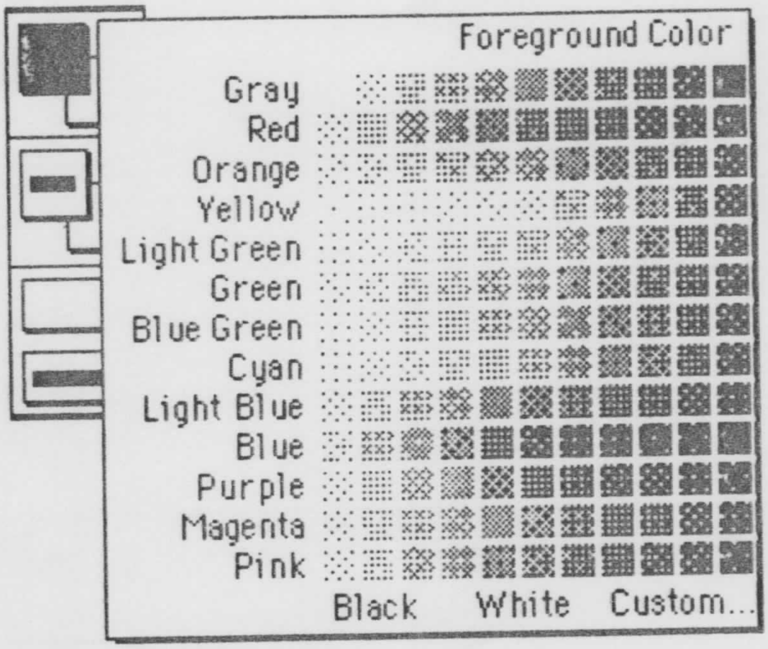


DELTAGRAPH has two sets of color icons in the Drawing palette: the first set, showing two squares, is for the fill color: the second set, showing two squares, one with a thick line inside, is for the line color.

The foreground squares (upper left) are for setting foreground color. The background squares (lower right) are for setting background color.

Initially, the default foreground color is black (so any part of an object that is black is part of the foreground), and the default background color is white (so any part of the object that is white is part of the background).

When you select an element that is set to a different foreground or background color, that color appears in the appropriate icon of the Drawing palette.



If you are working with a monochrome monitor, the colors appear as shaded patterns showing the approximate lightness and darkness of the colors in the palette. You can choose these colors, but the modified elements do not display the color approximations on the screen. They display only the fill or line pattern that is selected for that element. Use the Display option in the **Preferences...** command in the Edit menu to substitute percentages of gray for color on the screen.

This allows you to make color adjustments on a monochrome monitor for color output such as film recorders or color printers. If you are using an Apple LaserWriter printer and LaserWriter driver 6.0 or higher, your color settings can be converted to gray-scale patterns by choosing the Color/Grayscale option when you print.

To change the foreground color of an element:

1. Select the element.
2. Press the Foreground fill color icon to display the pop-up menu, select the color or shade you want, then release the mouse button. The color or shade appears in the selected surface, or in the selected series of chart elements.

Note: To make a *solid* color, be sure that the *black fill pattern* is selected. If the solid white pattern is selected, choosing a color automatically changes it to solid black.

To change the background color of an element:

1. Select the element.
2. Be sure that the fill pattern is *not* black.
3. Press the Background fill color icon to display the pop-up menu, select the color you want, then release the mouse button. The color appears in the background portion of the pattern, creating an effect that is a combination of the foreground and background colors.

   By selecting a 50-percent gray pattern, you can create "new" colors by combining a foreground and a background color.

Note: Background color shows on a selected element only when the element's fill pattern is not solid.

To change the foreground color of a line:

1. Select the line.
2. Press the Foreground line-color icon to display the pop-up menu, select the color you want, then release the mouse button. The color appears in the selected line, or in the selected series of lines.

Note: To make a *solid* color, be sure that the *black line fill pattern* is selected.

To change the background color of a line:

1. Select the line.
2. Be sure that the line fill pattern is *not* black.
3. Press the Background line-color icon to display the pop-up menu, select the color you want, then release the mouse button. The color appears in the background portion of the pattern, creating an effect that is a combination of the foreground and background colors.

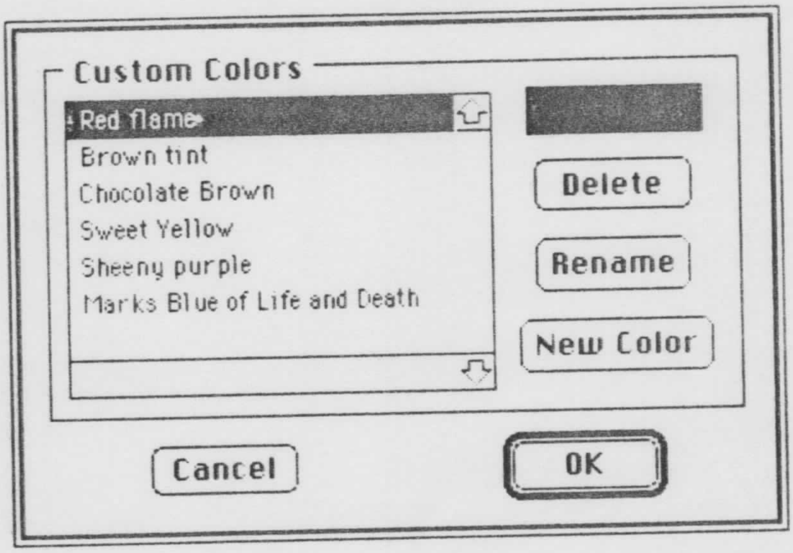
Using custom colors

DELTAGRAPH lets you make your own colors using the Macintosh color wheel. Custom colors are available for all Chart windows in a document, and are saved with the document.

To create a custom color:

1. Select the object you want to color.

2. Press the Foreground or Background color fill or line palette for the object, or the Text-color palette if you are coloring text, then select "Custom...." The "Custom Colors" dialog appears.

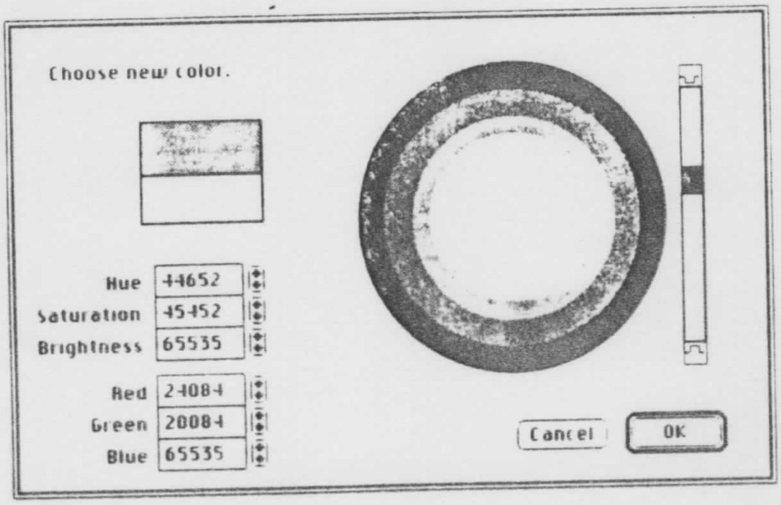


Red flame
Brown tint
Chocolate Brown
Sweet Yellow
Sheeny purple
Marks Blue of Life and Death

The dialog shows the names of any existing custom colors. The first name is automatically selected, and the rectangle on the upper right shows the custom color associated with it.

You can click on any name to show its associated color in the rectangle.

3. Click on the "New Color" button. The Macintosh color wheel dialog appears.



Hue 44652
Saturation 45452
Brightness 65535
Red 24084
Green 20084
Blue 65535

The display box at the upper left shows the current color. (As you modify the color, the top half shows the new color; the bottom half continues to show the original color.) A small box shows the color's position inside the color wheel.

4. Click or drag anywhere on the color wheel to try out a new color.

   - Click on the outer edge of the wheel to select colors of the purest hue.
   - Click toward the center to increase the amount of saturation (or white) added to the pure hue.
   - Use the scroll bar at the right to increase or decrease the brightness. Drag down to make colors darker; drag up to make them lighter.

   Each of the two sets of boxes at the lower left of the dialog shows a numerical representation of the color in the display box. You can record either set to use for reference, in case you ever want to match the color in another application.

5. When you are satisfied with the new color, click OK. The "Name New Color" dialog appears.

6. Enter a name for your custom color, then click OK.

   The "Custom Colors" dialog reappears, showing the new color in the rectangle and the new name selected in the dialog.

7. Click OK. The selected object now displays your new color.

To rename a custom color:

1. Choose the Custom... option from any color palette. The "Custom Colors" dialog appears, showing the names of any custom colors.
2. Select the color you want to rename.
3. Click on the Rename button. The "Name New Color" dialog appears.
4. Enter the new name, then click OK. The new name replaces the old name in the Custom Colors list. Click OK again to exit this dialog.

To delete a custom color:

1. Choose the Custom... option from any color palette. The "Custom Colors" dialog appears, showing the names of any custom colors.
2. Select the color you want to delete.

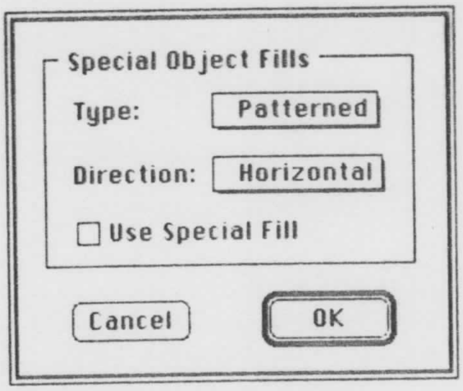
3. Click on the Delete button. The color disappears from the list.
4. Click OK to exit the dialog, or click Cancel to exit without deleting the color.

Using Special Fills

Special fills differ from normal fills because they create a special color or pattern effect on the selected object.

You can use the **Special Fills...** command in the Drawing menu to create some remarkable effects with patterns and colors.

When you choose the **Special Fills...** command the following dialog appears:



Special Object Fills

Type: Patterned

Direction: Horizontal

☐ Use Special Fill

You can choose one of these types from the pop-up menu that appears when you click on "Patterned":

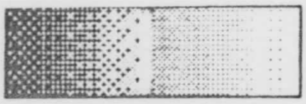
- Patterned
- Color

You can choose one of these directions from the pop-up menu that appears when you click on "Horizontal":

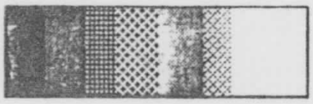
- Horizontal
- Vertical
- Radial

To implement your choices, click on the "Use Special Fill" check box, then click OK.

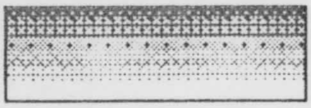
The following illustration shows each combination of special fill, created in DeltaGraph and exported in the PICT format. The PICT format shows the different types of special fills as they would print on a QuickDraw printer. On a PostScript printer both color and pattern fills default to the design of the pattern fills.



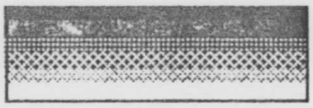
patterned horizontal



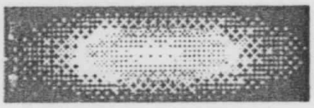
color horizontal



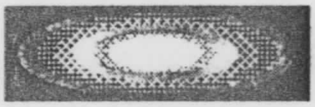
patterned vertical



color vertical



patterned radial



color radial

Note: When printing to a black-and-white or color PostScript printer, pattern and color fills will both print as PostScript patterns. When printing to a QuickDraw printer, pattern fills look different from color fills.

Use pattern fills when printing to a black-and-white or PostScript printer. Color fills are best used with a 32-bit color board. With an 8-bit color board, the color fills might not create a smooth blend of color on the screen. The output quality of special color fills depends on the output device.

Turning Chart Grids On and Off

Grids are lines extending from the axes onto the graph to mark the units of measurement and make the graph easier to read.

Two-dimensional charts have value and category grids. Three-dimensional charts have value, category, and series grids.

Refer to Figure 5-1 to distinguish between value, category, and series grids.

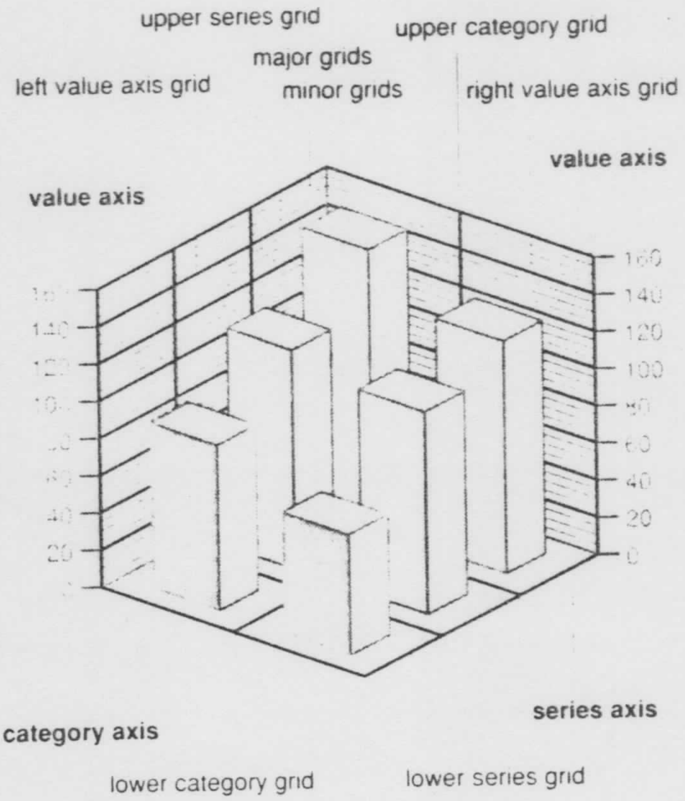


FIGURE 5-1. VALUE, CATEGORY, AND SERIES AXIS GRIDS

The value axis has both major and minor grids. Major grids coincide with the location of the major increments and tick marks on the axis. Minor grids coincide with minor divisions and tick marks on the axis. The category and series axes have major grids only.

Unless you change the grid settings, all major grids are turned on.

To hide and display grids:

1. Select the whole chart.
2. Choose the **Grids** command in the Chart menu and select the axis of the grid you want to change: Value, Category, or Series. DELTAGRAPH displays the appropriate grid dialog.
3. Click on the buttons you want to change.

4. Click on the Show button to preview the results without exiting the dialog. You can move the dialog out of the way by dragging the Title bar.

5. Click OK to make the change, or click Cancel to exit the dialog without changing the chart.

Changing Tick Marks

Tick marks are short marks on the axes to show the units of measurement.

Refer to Figure 5-2 to distinguish between value, category, and series tick marks. Two-dimensional charts have value and category tick marks. Three-dimensional charts have value, category, and series tick marks.

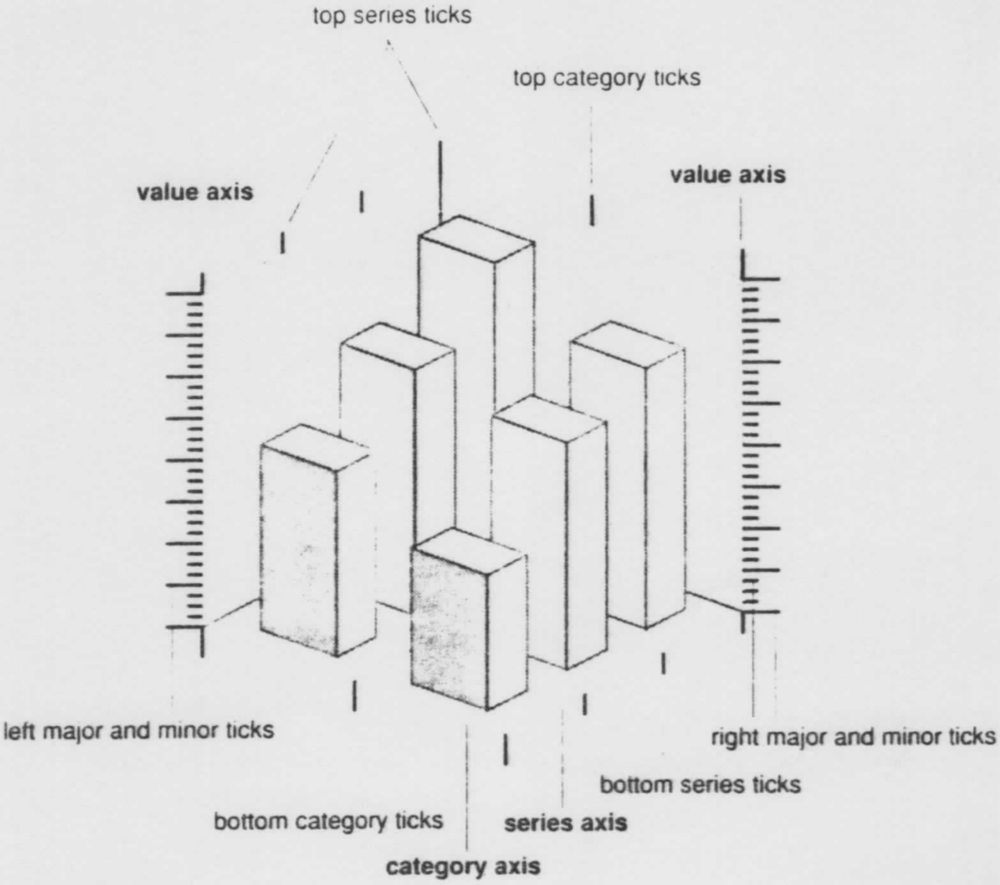


FIGURE 5-2. VALUE, CATEGORY, AND SERIES AXIS TICK MARKS

Two-dimensional charts have one set of ticks dialogs; three-dimensional charts have a different set of ticks dialogs.

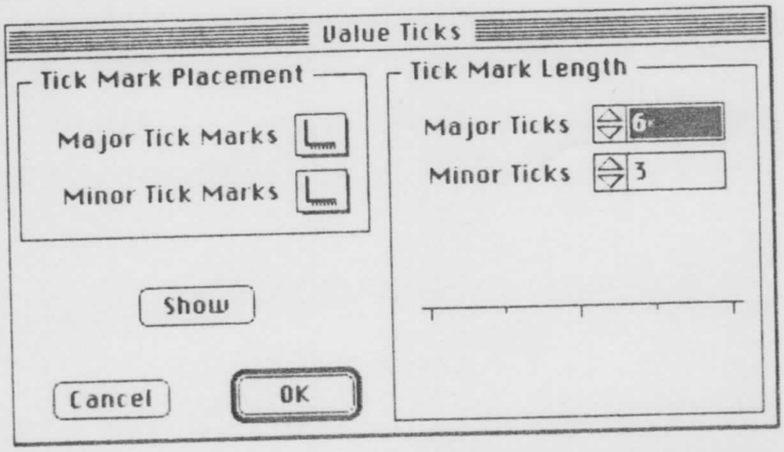
In general, to change tick mark placement on any axis:

1. Select the whole chart.
2. Choose the **Ticks** command in the Chart menu and select the axis of the ticks you want to change: Value, Category, or Series. DELTAGRAPH displays the appropriate ticks dialog.
3. Click on the items you want to change.
4. Click on the Show button to preview the results without exiting the dialog. You can move the dialog out of the way by dragging the Title bar.
5. Click OK to make the change, or click Cancel to exit the dialog without changing the chart.

Changing tick marks in 2-D charts

To change tick mark placement on the value axis:

1. Select the whole chart.
2. Choose the **Ticks** command in the Chart menu and select "Value" from the hierarchical menu. DELTAGRAPH displays the "Value Ticks" dialog.



Major Ticks 6
Minor Ticks 3

3. Click on Major Tick Marks or Minor Tick Marks under "Tick Mark Placement" to see the corresponding pop-up menu, then choose a style. The bottom option in these pop-ups is for No Tick Marks.

4. You can use the direction arrows under "Tick Mark Length," or type in any number from 0 to 50 points, to set the length of major and minor tick marks. The mini-axis at the bottom shows you the lengths as you change them.

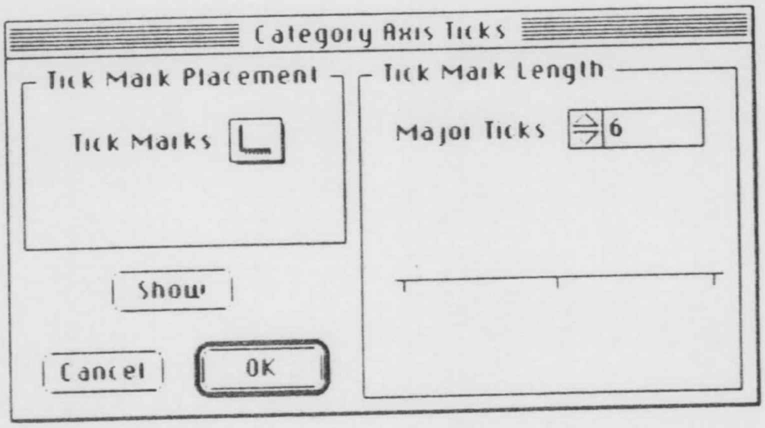
5. Click on the Show button to preview the results without exiting the dialog. You can move the dialog out of the way by dragging the Title bar.

6. Click OK to make the change, or click Cancel to exit the dialog without changing the chart.

To change tick mark placement on the category axis:

1. Select the whole chart.

2. Choose the **Ticks** command in the Chart menu and select "Category" from the hierarchical menu. DELTAGRAPH displays the "Category Ticks" dialog.



Major Ticks 6

3. Click on the Tick Marks pop-up menu to select the placement of your Tick Marks on the axis. The options include inside the axis, outside the axis, inside and outside the axis, and no Tick Marks.

4. You can use the direction arrows under "Tick Mark Length," or type in any number from 0 to 50 points, to set the length of major tick marks. The mini-axis at the bottom shows you the length as you change it.

Note: There are no Minor Ticks on a Category Axis.

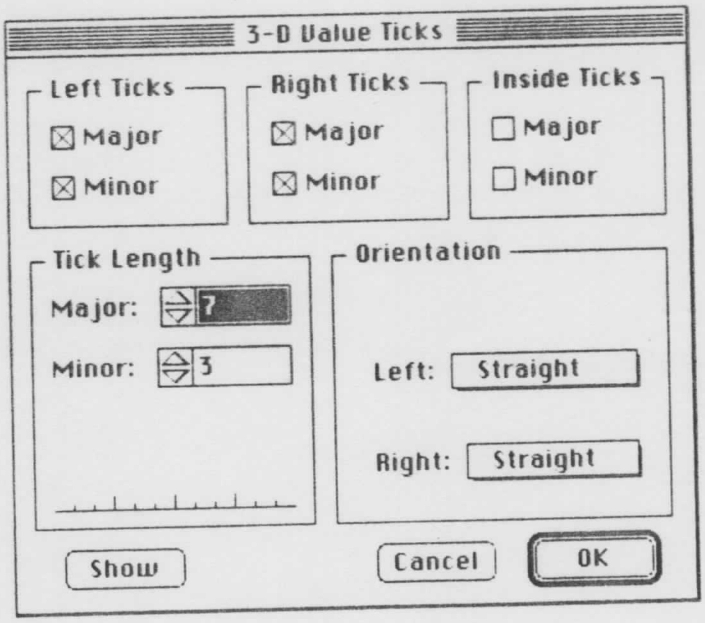
5. Click on the Show button to preview the results without exiting the dialog. You can move the dialog out of the way by dragging the Title bar.

6. Click OK to make the change, or click Cancel to exit the dialog without changing the chart.

Changing tick marks in 3-D charts

To change tick mark placement on the value axis:

1. Select the whole chart.
2. Choose the **Ticks** command in the Chart menu and select "Value" from the hierarchical menu. DeltaGraph displays the "3-D Ticks" dialog.



3-D Value Ticks

Left Ticks
☒ Major
☒ Minor

Right Ticks
☒ Major
☒ Minor

Inside Ticks
☐ Major
☐ Minor

Tick Length
Major: 7
Minor: 3

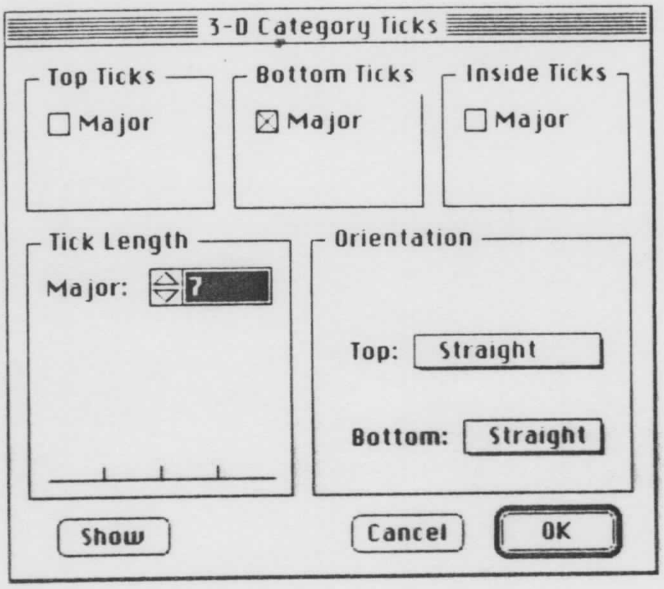
Orientation
Left: Straight
Right: Straight

3. Click on the appropriate check boxes to turn major and minor tick marks on or off for the axes on the Left, Right, and Inside of a three-dimensional chart.
4. You can use the direction arrows under "Tick Mark Length," or type in any number from 0 to 50 points, to set the length of major and minor tick marks. The mini-axis at the bottom shows you the lengths as you change them.
5. Choose "Straight" or "90°" from the pop-up menus under "Orientation" to set the angle of the ticks relative to the axis for the Left and Right side of a three-dimensional chart.
6. Click on the Show button to preview the results without exiting the dialog. You can move the dialog out of the way by dragging the Title bar.
7. Click OK to make the change, or click Cancel to exit the dialog without changing the chart.

To change tick mark placement on the category or series axis:

1. Select the whole chart.

2. Choose the **Ticks** command in the Chart menu, then select "Category" or "Series" from the hierarchical menu. DELTAGRAPH displays the "3-D Ticks" dialog.



3. Click on the appropriate check boxes to turn major tick marks on or off for the axes on the Top, Bottom, and Inside of a three-dimensional chart.

4. You can use the direction arrows under "Tick Length" or type in any number from 0 to 50 points to set the length of major tick marks. The mini-axis on the bottom shows you the length as you change it.

5. Choose "Straight" or "90°" from the pop-up menus under "Orientation" to set the angle of the ticks relative to the axis for the Top and Bottom of a three-dimensional chart.

6. Click on the Show button to preview the results without exiting the dialog. You can move the dialog out of the way by dragging the Title bar.

7. Click OK to make the change, or click Cancel to exit the dialog without changing the chart.

Positioning Labels

Labels are text or numbers describing what is measured on each axis.

Refer to Figure 5-3 to identify value, category, and series labels.

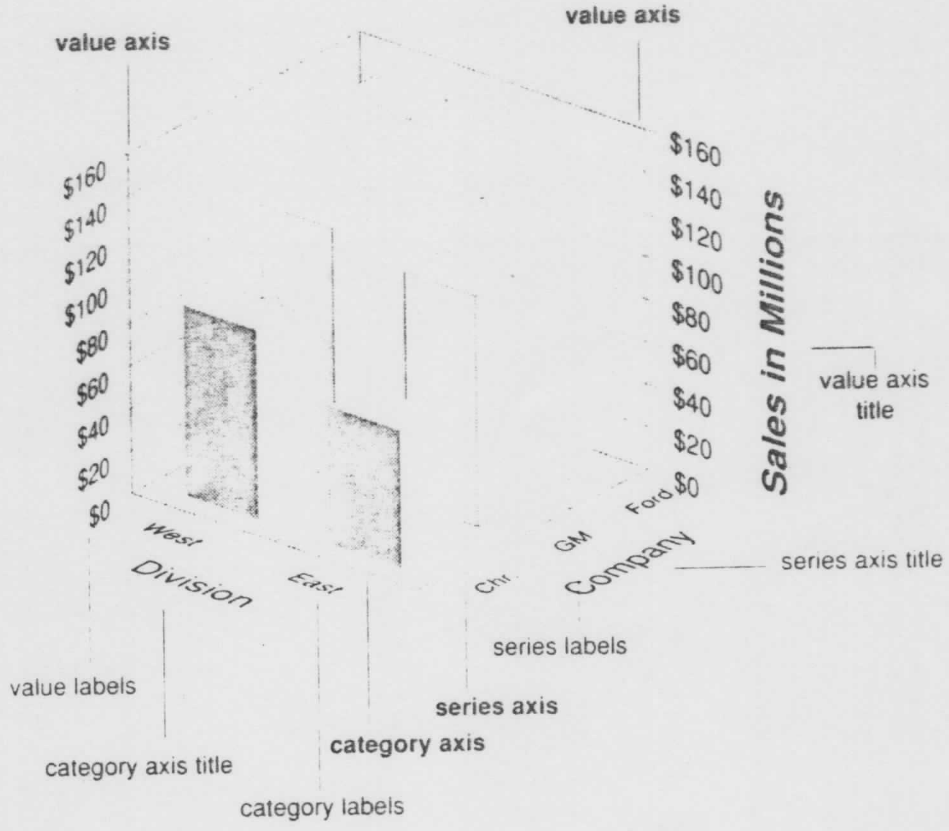


FIGURE 5-3. VALUE, CATEGORY, AND SERIES AXIS LABELS

Two-dimensional charts have value and category labels. Three-dimensional charts have value, category, and series labels.

Use the **Labels** command in the Chart menu to change the position and rotation of the chart labels and to give each axis a title.

See the next section for instructions on entering an axis title.

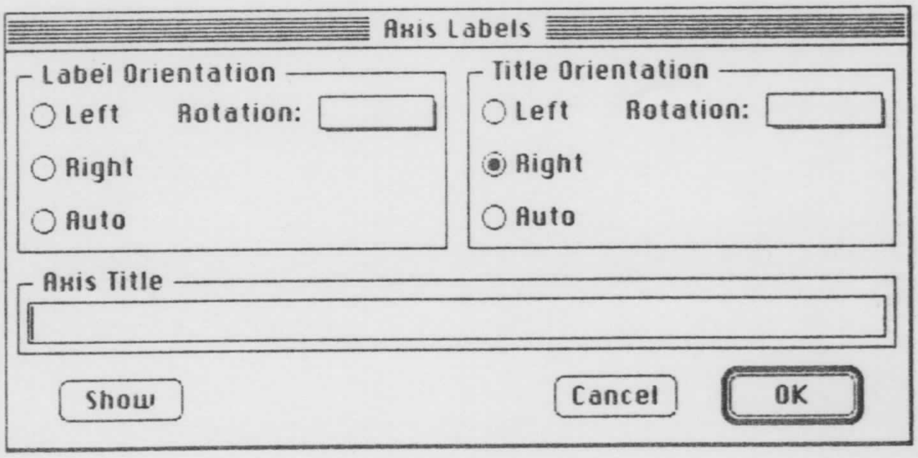
In general, to change label position on any axis:

1. Select the whole chart.
2. Choose the **Labels** command in the Chart menu to display the hierarchical menu, then select the labels you want to change: Value, Category, or Series. DeltaGraph displays the appropriate "Axis Labels" dialog.
3. Click on the items you want to change.
4. Click on the Show button to preview the results without exiting the dialog. You can move the dialog out of the way by dragging the Title bar.
5. Click OK to make the change, or click Cancel to exit the dialog without changing the chart.

Positioning labels in 2-D charts

To change label position and rotation on the value or category axis:

1. Select the whole chart.
2. Choose the **Labels** command from the Chart menu to display the hierarchical menu, then select the axis of the labels you want to change: Value or Category. DeltaGraph displays the "Axis Labels" dialog.



3. Use the "Label Orientation" section of this dialog to specify positions for the labels on the left and right, or top and bottom, of a particular axis. The options in the Rotation pop-up menus are:

   - Auto (default position)
   - 0°
   - 90°
   - 180°
   - 270°

4. Click on the Show button to preview the results without exiting the dialog. You can move the dialog out of the way by dragging the Title bar.

5. Click OK to make the change, or click Cancel to exit the dialog without changing the chart.

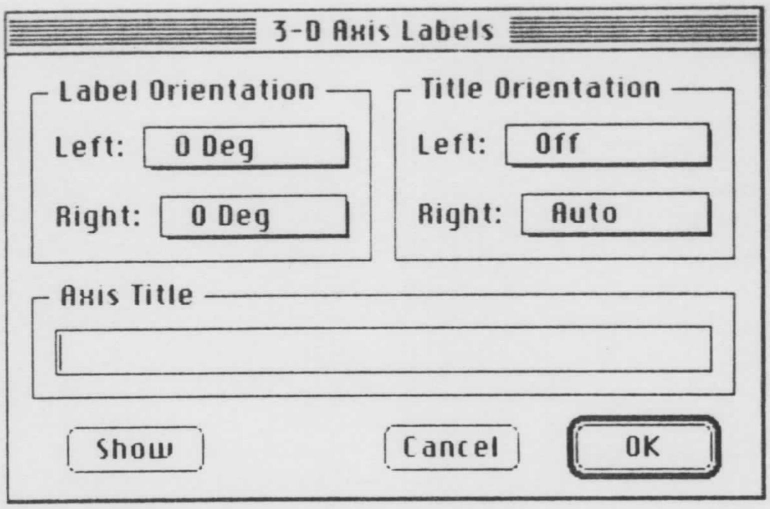
Note: When DeltaGraph draws a chart, it calculates the space required for the labels and orients them to provide the best fit. All new charts default to "Auto." Resizing the chart or changing the font characteristics may change the label orientation. If "Auto" is not selected and the label will not fit, the label text wraps to add another line.

Positioning labels in 3-D charts

To change label position and rotation on the value, category, or series axis:

1. Select the whole chart.

2. Choose the **Labels** command from the Chart menu to display the hierarchical menu, then select the axis of the labels you want to change: Value, Category or Series. DeltaGraph displays the "3-D Axis Labels" dialog.



3-D Axis Labels

Label Orientation

Left: 0 Deg

Right: 0 Deg

Title Orientation

Left: Off

Right: Auto

Axis Title

3. Press on the items you want to change to reveal the corresponding pop-up menus. You can specify positions for the labels on the left and right, or top and bottom, of a particular axis. The options in the pop-up menus are:

   - Off (label or title is not displayed on chart)
   - Auto (default position)
   - 0°
   - 90°
   - 180°
   - 270°
   - Special (for category and series axes, labels appear to be standing up on end)

4. Click on the Show button to preview the results without exiting the dialog. You can move the dialog out of the way by dragging the Title bar.

5. Click OK to make the change, or click Cancel to exit the dialog without changing the chart.

Adding an Axis Title

You can use the **Labels** command in the **Chart menu** to add axis titles to your chart.

To add an axis title:

1. Select the whole chart.
2. Choose the **Labels** command in the Chart menu to display the hierarchical menu, then select the axis you want to name: Value, Category, or Series. DELTAGRAPH displays the appropriate "Axis Labels" dialog.
3. Enter the title of the axis under "Axis Title" in the dialog.
4. Use the options in the pop-up menus under "Title Orientation" to position the title at the left, right, top, or bottom of the chart. The options are:
   - Off (title is not displayed on chart; available in 3-D only)
   - Auto (default position)
   - 0°
   - 90°
   - 180°
   - 270°
5. Click on the Show button to preview the title without exiting the dialog. You can move the dialog out of the way by dragging the Title bar.
6. Click OK to make the change, or click Cancel to exit the dialog without changing the chart.

Changing Axes

Refer to Figure 5-4 to identify the value, category, and series axes:

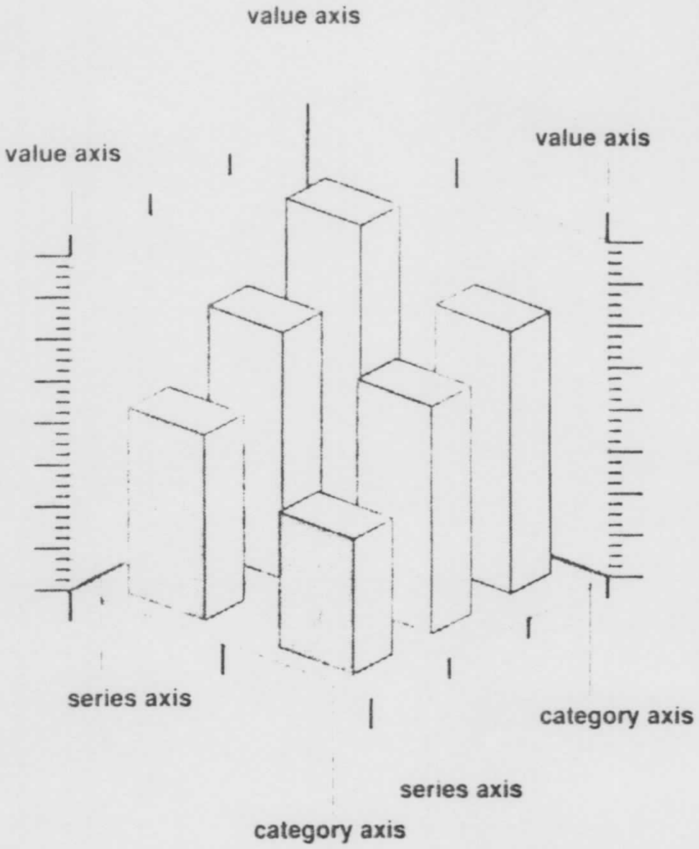


FIGURE 5-4. VALUE, CATEGORY, AND SERIES AXES

Although the DELTAGRAPH ticks, grids, and labels appear next to the axes, as shown in Figures 5-1, 5-2, and 5-3 earlier in this chapter, technically the three axes are the three lines creating the frame of the chart, and are marked at each end by the axis resizing handles (large squares) that appear when you select the chart.

Changing the value axis

DELTAGRAPH automatically computes appropriate values for the top and bottom of the value axis, and for the major and minor increments for grid lines and tick marks. These values are based on the data in the associated Notebook page.

Note: In Scatter charts, the X and Y axes are value axes. In 3-D Scatter and 3-D Scatterline charts, the X, Y, and Z axes are value axes.

You can change the following parameters on the value axis of two- and three-dimensional charts:

- bottom value (value at the bottom of the axis)
- top value (value at the top of the axis)
- major increment (divisions for value labels and major ticks and grids)
- minor divisions (divisions for minor ticks and grids)

Unless you change it, DELTAGRAPH uses linear axis scaling. You can choose from the following options for axis scaling:

- Linear (based on graduated values computed from the Notebook data)
- Logarithmic (based on powers of ten)
- Date/Time (based on units of time measurement)

  The Date/Time option is useful only if your data consists of dates or times: you can specify both major and minor increments to be displayed as increments of specific units of time rather than as numbers. If you choose the Date/Time option, "Minor Divisions" (under the "Axis Values" section) will change to "Minor Increment." You may also have to format your value axis labels to reflect the time or date you want to display.

You can choose from the following Date/Time options:

- Seconds
- Minutes
- Hours
- Days
- Weeks
- Months
- Quarters

- Years
- Decades
- Centuries

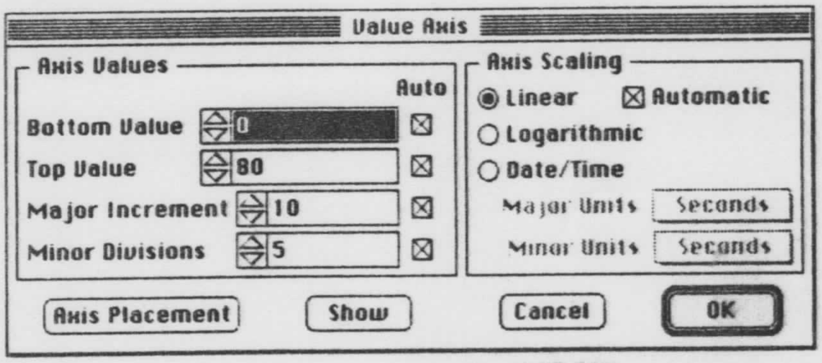
You can also change the placement of the value axis on the chart. For two-dimensional charts you can place the value axis in the following locations:

- on the left of the chart
- on the right of the chart
- on the category axis grid of your choice

On a three-dimensional chart you can specify the value at which to place the intersection of the category axis. This can be any value between the bottom value and the top value. This feature is particularly useful when plotting both positive and negative numbers.

To change the value axis of a two- or three-dimensional chart:

1. Select the chart.
2. Choose the **Axis** command from the Chart menu and select the Value option from the hierarchical menu. DELTAGRAPH displays the "Value Axis" dialog.



Value Axis

Axis Values

		Auto
Bottom Value	0	☒
Top Value	80	☒
Major Increment	10	☒
Minor Divisions	5	☒

Axis Scaling

● Linear ☒ Automatic
○ Logarithmic
○ Date/Time
Major Units: Seconds
Minor Units: Seconds

3. Decide whether you want the algorithm for axis scaling to be Linear, Logarithmic, or by Date/Time, then click on the option you want. DELTAGRAPH displays appropriate values for automatic scaling under "Axis Values" on the left side of the dialog.

All three methods compute the axis values automatically unless you enter your own number for bottom value, top value, major increment, or minor divisions under "Axis Values."

When you change one of the values under "Axis Values," the Auto check box next to it changes to unchecked, as does the Automatic check box under "Axis Scaling" on the right.

The Automatic check box under "Axis Scaling" on the right remains checked until you change one or more of the values under "Axis Values" on the left.

4. The Axis Placement button provides different options for two- and three-dimensional charts.

   For two-dimensional charts:

   To change the placement of the value axis, click on the Axis Placement button. The "Axis Placement" dialog appears. Click "Left" or "Right," or click "On Category" to enter the number of the category axis grid on which you want the value axis to appear.

   For three-dimensional charts:

   To change the value at which the category plane intersects the value axis, click on the Axis Placement button. The "Axis Placement" dialog appears, allowing you to enter a value ranging between the bottom and top axis values.

5. Click the Show button to preview your changes. When you have the results you want, click OK to implement them; click Cancel to exit the dialog without changing the chart.

Changing the category and series axes

In two- and three-dimensional charts you can change the number of labels displayed on the category axis. This is useful if the category axis contains too many labels to display neatly. You can, for example, display every other label in a set of twelve months.

You can also reverse the order in which the data series are displayed.

In two-dimensional charts you have these additional placement options:

- Bottom (default, category axis at bottom of chart)
- Top (category axis appears at top of chart and creates "hanging data graphics")
- On Value (category axis intersects the value axis at the number specified)

In general, to change the category or series axis of a two- or three-dimensional chart:

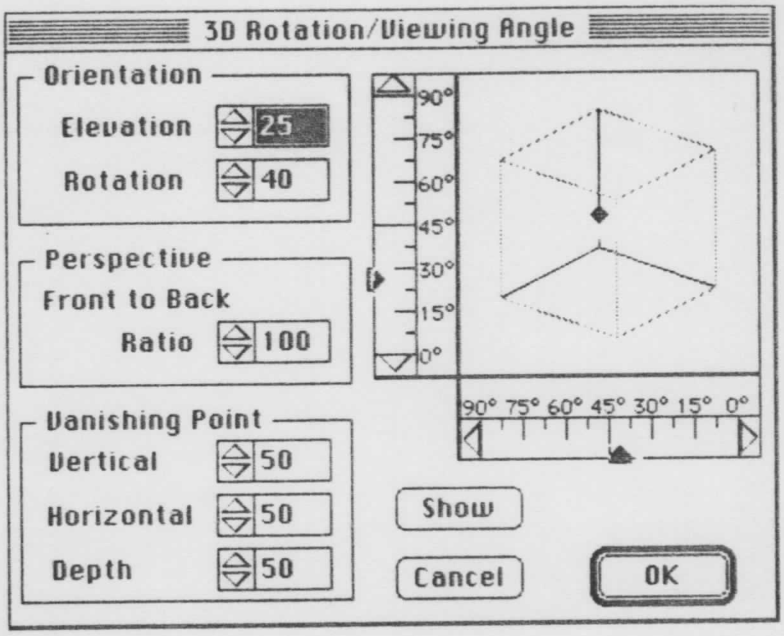
1. Select the chart.
2. Choose the **Axis** command from the Chart menu and select the axis you want to change: Category or Series.
3. Check the appropriate boxes and enter the numbers you want.
4. Click Show, OK, or Cancel.

Working with 3-D View

Use the **3-D View...** command in the Chart menu to change the orientation, perspective, and vanishing point of a three-dimensional chart. Experiment with combinations of the three measurements to obtain the effect you want.

- Orientation controls the angle (up and down and side to side) of the chart relative to the eye through rotation and elevation settings.
- Perspective controls the apparent distance of the back of the chart relative to the front of the chart.
- Vanishing point controls the point on the chart that the eye is looking through.

When you choose the **3-D View...** command from the Chart menu, the following dialog appears:



Orientation

Elevation 25

Rotation 40

Perspective

Front to Back Ratio 100

Vanishing Point

Vertical 50

Horizontal 50

Depth 50

To change the orientation:

1. Select the chart.
2. Choose the **3-D View...** command from the Chart menu. DELTAGRAPH displays the "3-D Rotation/Viewing Angle" dialog. You are now working with the "Orientation" section of this dialog.
   - Elevation controls the horizontal viewing angle of the chart.
   - Rotation controls the vertical viewing angle of the chart.
3. Use the direction arrows to scroll through the numbers next to "Elevation." The numbers range from 0 to 90 degrees, and move in increments of 5 degrees. You can enter a number in between if you wish.

   As you change numbers, the graphic cube in the upper right-hand corner of the dialog changes to show you the results of your choice.

   Alternatively, you can drag the slider arrow or click on the top or bottom arrow in the Vertical Degree bar next to the graphic cube to change the elevation.
4. Do the same in the "Rotation" box, or use the Horizontal Degree bar underneath the graphic cube.
5. When you see a combination of elevation and rotation that you like, click OK, or click the Show button to preview the 3-D orientation without leaving the dialog. You can drag the Title bar of the dialog to move it out of the way.

To change the perspective:

1. Select the chart.
2. Choose the **3-D View...** command from the Chart menu. DELTAGRAPH displays the "3-D Rotation/Viewing Angle" dialog. You are now working with the "Perspective" section of this dialog.
3. Use the direction arrows to scroll through the numbers next to "Front to Back Ratio." The numbers range from 20% to 100%, and move in increments of 5%. You can enter a number in between if you wish.

   As you change numbers, the graphic in the upper right-hand corner of the dialog changes to show you the results of your choice. At 100%, the size of the back is equal to the size of the front. At 50%, the size of the back is one-half the size of the front.
4. When you see a perspective that you like, click OK, or click the Show button to preview the results without leaving the dialog. You can drag the Title bar of the dialog to move it out of the way.

To change the vanishing point:

1. Select the chart.
2. Choose the **3-D View...** command from the Chart menu. DELTAGRAPH displays the "3-D Rotation/Viewing Angle" dialog. You are now working with the "Vanishing Point" section of this dialog.
3. Use the direction arrows to scroll through the numbers next to "Vertical," "Horizontal," and "Depth." The numbers range from 0 to 100, and move in increments of 5. The default is 50. You can enter your own number if you wish.

   As you change numbers, the graphic cube in the upper right-hand corner of the dialog changes to show you the results of your choice.
4. When you see a combination of vertical, horizontal, and depth you like, click OK, or click the Show button to preview the vanishing point without leaving the dialog. You can drag the Title bar of the dialog to move it out of the way.

Note: The effect that Vanishing Point settings have on your 3-D chart is relative to the Orientation and Perspective settings. The default setting for Vanishing Point is always in the middle of the chart. Experiment with all three settings to produce a wide variety of chart views.

Changing Symbols

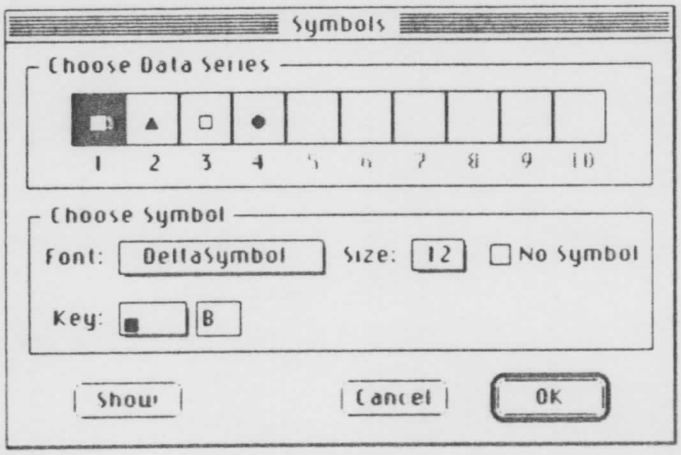
The **Symbols...** command in the Chart menu lets you choose your own symbol to represent data series in Line, Step, Scatter, High-Low, Range, 3-D Scatter, and 3-D Scatterline charts.

In DELTAGRAPH, symbols are created by using characters in a special screen font called DeltaSymbol that is supplied on your Utilities disk. If you have installed the DeltaSymbol font into your System, these symbol characters will be generated automatically when the chart is created. If the DeltaSymbol font is not present in your System file, the default font becomes Zapf Dingbats.

Note: If you use a PostScript printer, you should also make sure that you place the PostScript outline version of DeltaSymbol, called DeltaSym, into your System folder. This enables most PostScript printers to automatically download the PostScript commands for the font into the printer.

To choose your own symbol:

1. Select the chart.
2. Choose the **Symbols...** command from the Chart menu. The "Symbols" dialog appears, showing a default symbol for each data series.
3. Click on the symbol you want to change in the "Choose Data Series" part of the dialog.



Font: DeltaSymbol Size: 12 ☐ No Symbol

Key: ■ B

4. Choose the font and size in the "Choose Symbol" area. You can choose from all the fonts in your system file. You can use the Other... option in the Size pop-up menu to enter a non-standard size.

5. To display all the characters in the chosen font, click on the current symbol, next to "Key:" in the dialog.

6. Select the symbol you want to use. (If you don't want any symbol for a data series, choose "No Symbol.")

7. Enter the point size next to the symbol.

8. Repeat steps 3 through 7 for each data series symbol you want to change.

   When you have more than 10 data series, a pair of arrows appear on both ends of the "Choose Data Series" boxes. Click on the right arrow to move to the higher-numbered series; click on the left arrow to move back to the lowered-numbered series.

9. Click on the Show button to preview your selections. You can drag the Title bar of the dialog to move it away from your viewing area. Click OK when you are satisfied with the results, or click Cancel to exit the dialog without changing the chart.

Using Options

Most DELTAGRAPH chart types have special options you can access through the **Options...** command in the Chart menu. The different chart options are described in this section.

In general, to access special options for charts:

1. Select the chart.

2. Choose the **Options...** command from the Chart menu. The appropriate "Options" dialog appears.

3. Enter data appropriate to the dialog.

4. Click on the Show button to preview your changes without exiting the dialog. You can drag the Title bar to move the dialog away from your viewing area.

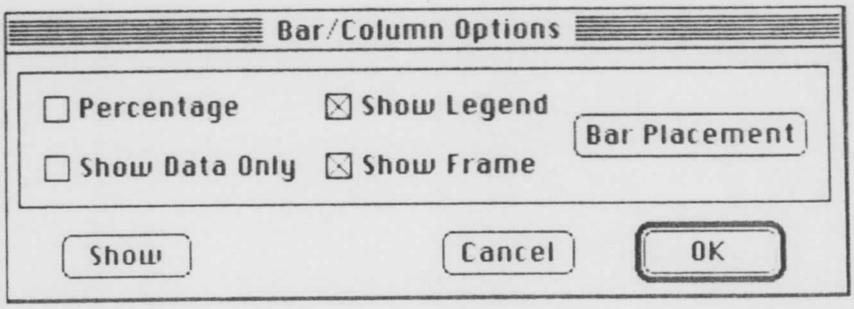
5. When you have the result you want, click OK to implement the changes; or click Cancel to exit the dialog without changing the chart.

The following instructions assume you have completed steps 1 and 2 for accessing special options, and that you know how to use the Show, Cancel, and OK buttons, as described in steps 4 and 5 above.

In the options dialogs, the term "Frame" means the axes, grids, ticks, and labels on a chart. The term "Data Only" refers to the data graphics on the chart.

Bar and Column chart options

This is the "Bar/Column Options" dialog for two-dimensional charts:



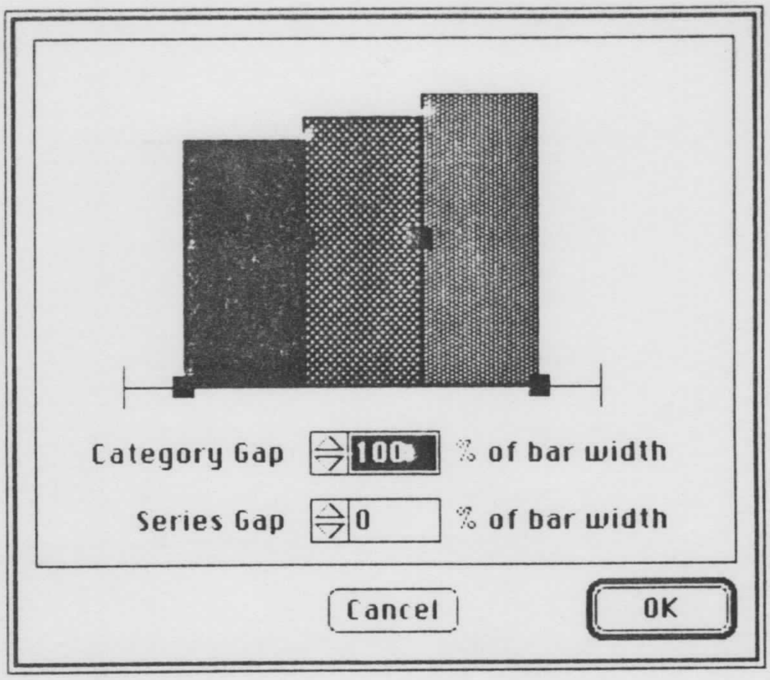
Bar/Column Options

☐ Percentage
☒ Show Legend
☐ Show Data Only
☒ Show Frame

You have the following options for two-dimensional Bar and Column charts:

- Percentage (changes the value axis and shows each data graphic as a percentage of the whole; the bottom value axis label changes to 0 and the top value changes to 1)
- Show Legend (turns legend on or off; default setting is "on")
- Show Data Only (shows only the data graphics with no other chart elements; default setting is "off")
- Show Frame (shows the axes, grids, ticks, and labels — the frame of the chart; default setting is "on")
- Bar Placement (controls the distance between bars on the category axis, and the width of each data graphic in the series, computed as a percentage of the bar width)

  If you select "Bar Placement," the following dialog appears. The graphic reflects the number of data series in your chart.



Category Gap 100 % of bar width

Series Gap 0 % of bar width

To change the category gap, you can drag the lower bar-sizing handles (squares), use the direction arrows to scroll through the percentage options, or enter any number between 0 and 1000%.

To change the series gap, you can drag the upper bar-sizing handles (squares), use the direction arrows to scroll through the percentage options, or enter any number between 0 and 1000%.

Line, Area, and Step chart options

You have the following options for Line, Area, and Step charts:

- Show Symbols (turns symbol display on or off for Line and Step charts; default setting is "on")
- Show Legend (turns legend on or off; default setting is "on")
- Show Data Only (displays the data graphics without the frame; default setting is "off")
- Show Frame (turns the frame on or off; default setting is "on")
- Switch Axes (reverses the position of the two axes)

Pie and Stacked Pie chart options

You have the following options for Pie and Stacked Pie charts in the "Pie Options" dialog:

- Show Legend (turns legend on or off; default setting is "on")
- Show Data Only (displays the data graphics without the frame; default setting is "off")
- Reference Angle (changes the rotation of the Pie chart)

Scatter chart options

You have the following options for two-dimensional Scatter charts in the "Scatter Options" dialog:

- Switch Axes (reverses the position of the two axes)
- Connect Points (connects the data points with lines; default setting is "off")
- Show Symbols (turns symbol display on or off; default setting is "on")
- Show Data Only (displays the data graphics without the frame; default setting is "off")
- Show Legend (turns legend on or off; default setting is "on")
- Show Frame (turns the frame on or off; default setting is "on")

Table chart options

This is the "Table Chart Options" dialog:

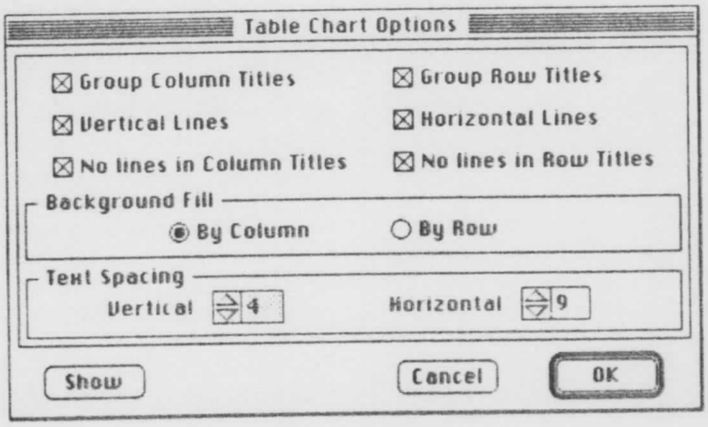


Table Chart Options

☒ Group Column Titles
☒ Group Row Titles
☒ Vertical Lines
☒ Horizontal Lines
☒ No lines in Column Titles
☒ No lines in Row Titles

Background Fill
● By Column
○ By Row

Text Spacing
Vertical 4
Horizontal 9

You have the following options for Table charts in the "Table Chart Options" dialog:

- Group Column Titles (groups the titles of the columns together as a selectable unit)
- Group Row Titles (groups the titles of the rows together as a selectable unit)
- Vertical Lines (turns vertical lines on or off; default setting is "on")
- Horizontal Lines (turns horizontal lines on or off; default setting is "on")
- No Lines in Column Titles (turns lines in column titles on or off)
- No Lines in Row Titles (turns lines in row titles on or off)
- Background Fill (sets direction of background fills by column or row)
- Text Spacing (increases or decreases the amount of space between the text and the table grid lines)

  Text spacing is measured in points (1/72 of an inch). Use the direction arrows to scroll through the available settings, or type in a number.

High-Low chart options

The "High-Low Chart Options" dialog offers the following options:

- Switch Axes (reverses the position of the two axes)
- Show Legend (turns legend on or off; default position is "on")
- Show Data Only (displays data graphics without the frame; default setting is "off")
- Show Frame (turns frame on or off; default position is "on")
- Show Symbols (turns symbol display on or off; default position is "on")

Range chart options

The "Range Chart Options" dialog offers the following options:

- Switch Axes (reverses the position of the two axes)

- Show Legend (turns legend on or off; default position is "on")
- Show Data Only (displays data graphics without the frame; default setting is "off")
- Show Frame (turns frame on or off; default position is "on")
- Show Symbols (turns symbol display on or off; default position is "on")

Contour chart options

The "Contour Chart Options" dialog offers the following options:

- Switch Axes (reverses the position of the two axes)
- Show Legend (turns legend on or off; default position is "on")
- Show Data Only (displays data graphics without the frame; default position is "off")
- Show Frame (turns frame on or off; default position is "on")
- Color Ramp (creates a smooth color blend on the chart)
- Pattern Ramp (creates a smooth pattern blend on the chart)

To use the Color or Pattern Ramp option:

1. Before opening the "Options..."dialog, select the first segment of the chart legend and use the Color or Fill-pattern palette to modify the color or pattern according to how you want the uppermost data in your chart to be displayed.
2. Select the last segment of the legend and do the same for the lowest data in your chart.

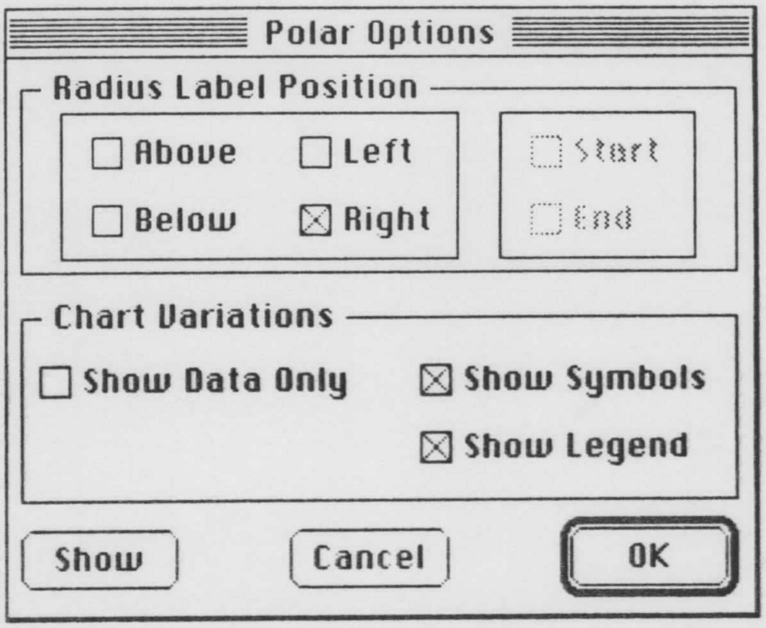
   You can also select each segment of the legend and modify its color or pattern individually.
3. Open the "Options..." dialog and click on the Color Ramp or Pattern Ramp button.
4. Click on the Show button if you want to preview your selection before implementing the changes.

DELTAGRAPH creates a blend of colors or patterns that range between your top and bottom selections.

5. Click OK to implement the changes, or click Cancel to exit the dialog without changing your chart.

Polar chart options

This is the "Polar Options" dialog:



☐ Above ☐ Left ☐ Start

☐ Below ☒ Right ☐ End

☐ Show Data Only ☒ Show Symbols

☒ Show Legend

This dialog offers the following options for Polar charts:

- Radius Label Position (lets you place radius labels above, below, or on the left or right of the chart; choose any or all options)
- Start (places the radius labels at the beginning of the Polar chart)
- End (places the radius labels at the end of the Polar chart)

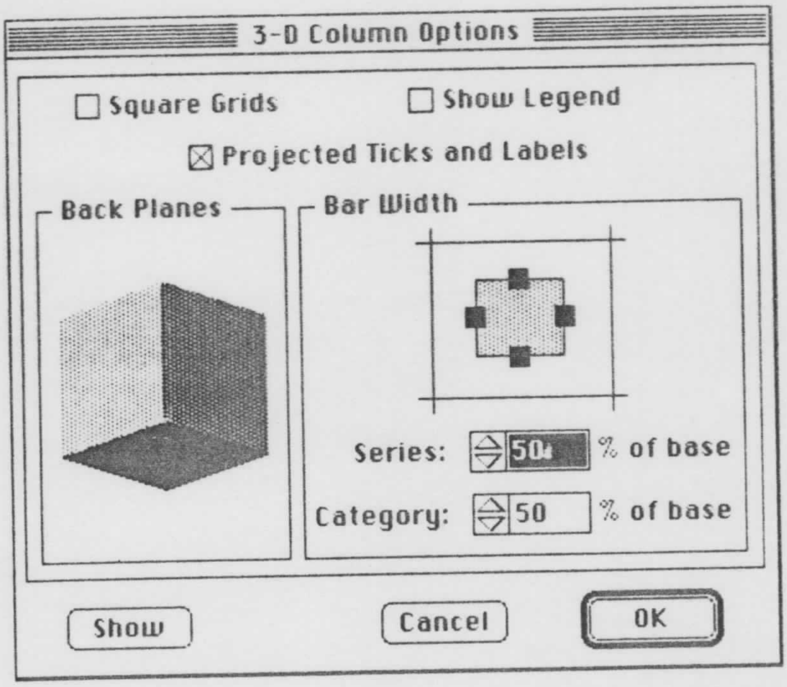
Note: Start and End are available only if you have formatted your Polar chart to less than 360 degrees in the axis dialog.

- Show Data Only (displays data graphics without the frame; default setting is "off")

- Show Symbols (turns symbol display on or off; default setting is "on")
- Show Legend (turns legend on or off; default setting is "on")

3-D Column chart options

This is the "3-D Column Options" dialog:



☐ Square Grids
☐ Show Legend
☒ Projected Ticks and Labels

Series: 50 % of base
Category: 50 % of base

This dialog offers the following options for 3-D Column charts:

- Square Grids (resets the grids on the bottom chart plane to square; default setting is "off")
- Show Legend (turns legend on or off; default setting is "off")
- Projected Ticks and Labels (turns projected ticks and labels on or off; default setting is "off")

  Projected ticks and labels are drawn in perspective according to the settings in the "3-D View" dialog. Because true perspective is available only in PostScript output, you may want to turn them off if you are outputting to a QuickDraw printer or to a PICT file.

- Back Planes (turns any or all three back planes on or off)

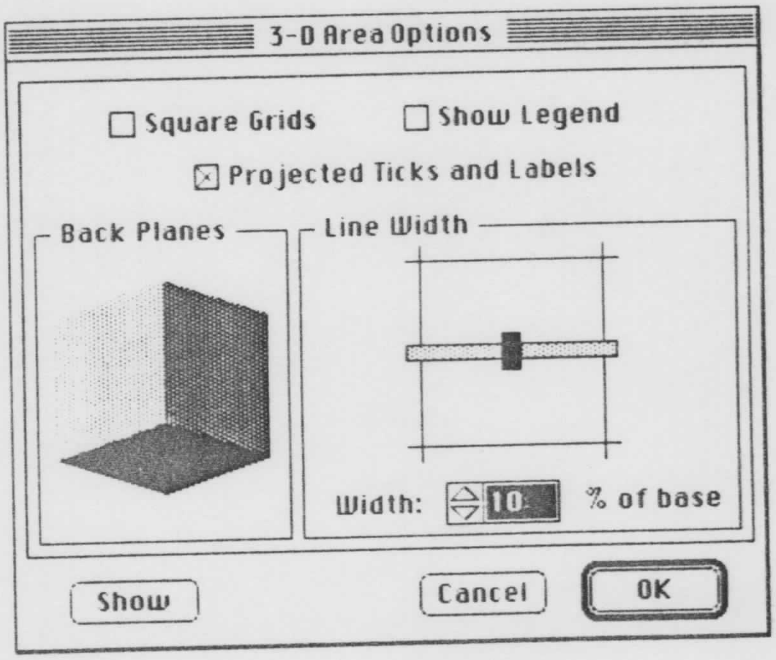
  To turn back planes on or off, click on the plane(s) you want to change. (All planes are on unless you change them.)

- Bar Width (changes the length and width of the bars based on their percentage of the base grid size)

  To change the bar width, drag the large bar-sizing handles until the data graphic is the length and width you want. The numbers change as you drag, indicating the size as a percentage of the base of the category or series axis. You can also use the direction arrows to scroll through the percentages, or you can enter a percentage of your choice.

3-D Area chart options

This is the "3-D Area Options" dialog:



☐ Square Grids
☐ Show Legend
☒ Projected Ticks and Labels
Width: 10 % of base

This dialog offers the following options for 3-D Area charts:

- Square Grids (sets grids to square; default setting is "off")
- Show Legend (turns legend on or off; default setting is "off")

- Projected Ticks and Labels (turns projected ticks and labels on or off; default setting is "on")

  Projected ticks and labels are drawn in perspective according to the settings in the "3-D View" dialog. Because true perspective is available only in PostScript output, you may want to turn them off if you are outputting to a QuickDraw printer or to a PICT file.

- Back Planes (turns any or all three back planes on or off; default setting is "on")

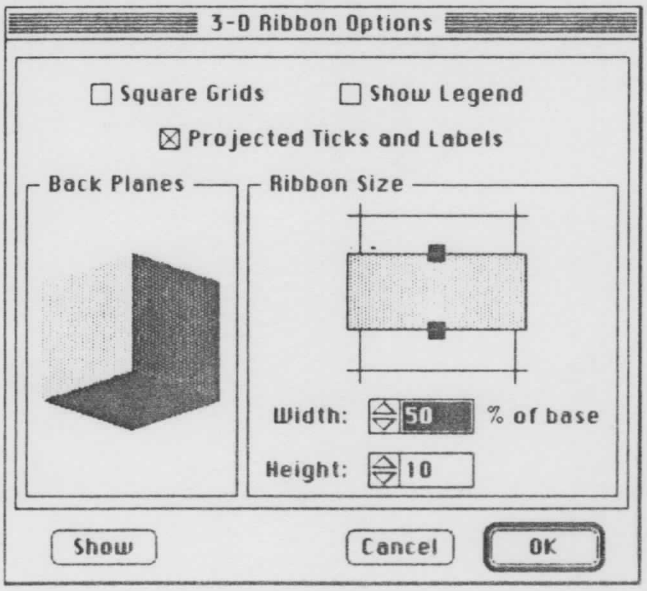
  To turn back planes on or off, click on the plane(s) you want to change.

- Line Width (changes the width of the areas based on its percentage of the base grid size)

  To change the depth of the area, drag the large bar-sizing handles until the data graphic is the width you want. (Drag from top or bottom to separate what looks like a single handle.) The numbers change as you drag, indicating the size as a percentage of the base of the series axis. You can also use the direction arrows to scroll the percentages, or enter a percentage of your choice.

3-D Ribbon chart options

This is the "3-D Ribbon Options" dialog:



3-D Ribbon Options

☐ Square Grids ☐ Show Legend

☒ Projected Ticks and Labels

Width: 50 % of base

Height: 10

This dialog offers the following options for 3-D Ribbon charts:

- Square Grids (sets grids to square; default setting is "off")
- Show Legend (turns legend on or off; default setting is "off")
- Projected Ticks and Labels (turns projected ticks and labels on or off; default setting is "on")

  Projected ticks and labels are drawn in perspective according to the settings in the "3-D View" dialog. Because true perspective is available only in PostScript output, you may want to turn them off if you are outputting to a QuickDraw printer or to a PICT file.

- Back Planes (turns any or all three back planes on or off; default setting is "on")

  To turn back planes on or off, click on the plane(s) you want to change.

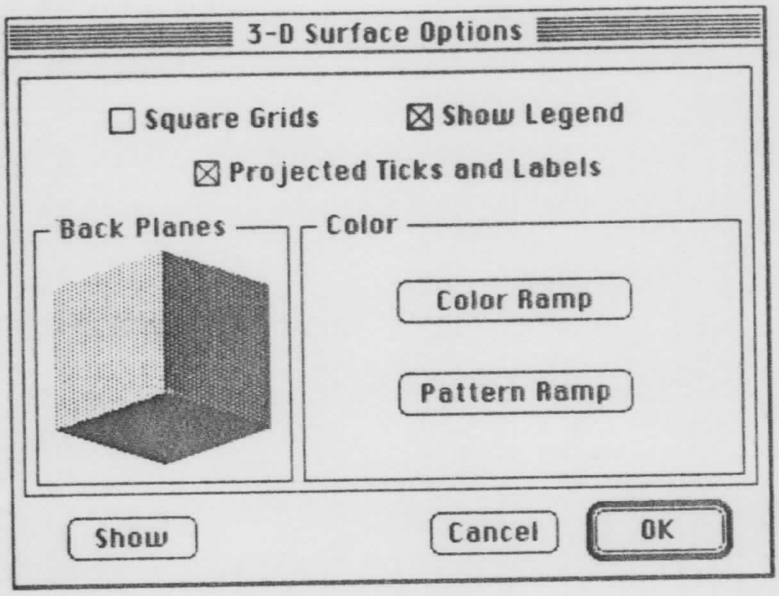
- Ribbon Size (changes the width of the ribbons based on their percentage of the base grid size)

  To change the ribbon width, drag the large bar-sizing handles until the data graphic is the width you want. The number changes as you drag, indicating the size as a percentage of the base grid size. You can use the direction arrows to scroll through the percentages, or you can enter a percentage between 1 and 100.

  The height of the ribbons is measured in points (1/72 of an inch). To change the height, you can use direction arrows to scroll through the point sizes, or you can type in the point size you want.

3-D Surface chart options

The "3-D Surface Options" dialog follows on the next page:



☐ Square Grids

☒ Show Legend

☒ Projected Ticks and Labels

This dialog offers the following options for 3-D Surface charts:

- Square Grids (sets grids to square; default setting is "off")
- Show Legend (turns legend on or off; default setting is "off")
- Projected Ticks and Labels (turns projected ticks and labels on or off; default setting is "on")

  Projected ticks and labels are drawn in perspective according to the settings in the "3-D View" dialog. Because true perspective is available only in PostScript output, you may want to turn them off if you are outputting to a QuickDraw printer or to a PICT file.
- Back Planes (turns any or all three back planes on or off; default setting is "on")

  To turn back planes on or off, click on the plane(s) you want to change.
- Color Ramp (creates a smooth color blend on the charts)
- Pattern Ramp (creates a smooth pattern blend on the charts)

To use the Color or Pattern Ramp option:

1. Before opening the "Options..." dialog, select the first segment of the chart

legend and use the Color or Fill-pattern palette to modify the color or pattern according to how you want the uppermost data in your chart to be displayed.

2. Select the last segment of the legend and do the same for the lowest data in your chart.

   You can also select each segment of the legend and modify its color or pattern individually.

3. Open the "Options…" dialog and click on the Color Ramp or Pattern Ramp button.

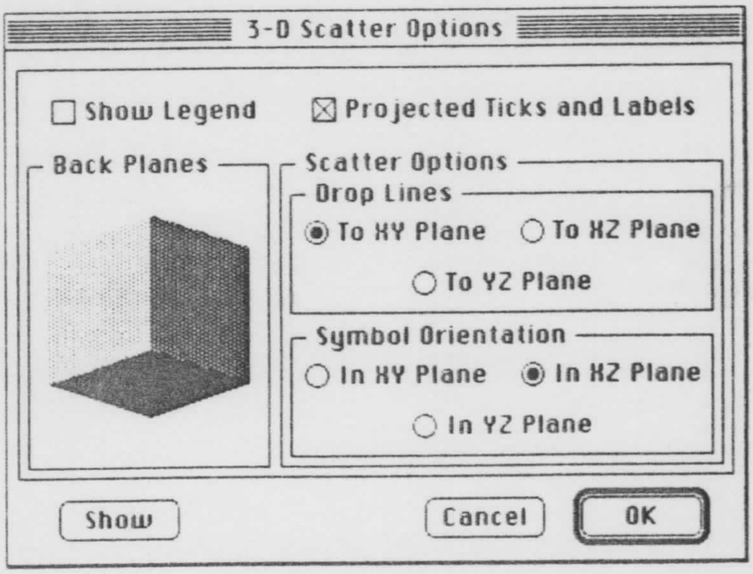
4. Click on the Show button if you want to preview your selection before implementing the changes.

   DELTAGRAPH will create a blend of colors or patterns that range between your top and bottom selections.

5. Click OK to implement the changes, or click Cancel to exit the dialog without changing your chart.

3-D Scatter chart options

This is the "3-D Scatter Options" dialog:



3-D Scatter Options

☐ Show Legend ☒ Projected Ticks and Labels

Scatter Options

Drop Lines

● To XY Plane ○ To XZ Plane

○ To YZ Plane

Symbol Orientation

○ In XY Plane ● In XZ Plane

○ In YZ Plane

This dialog offers the following options for 3-D Scatter charts:

- Show Legend (turns legend on or off; default setting is "off")
- Projected Ticks and Labels (turns projected ticks and labels on or off; default setting is "on")

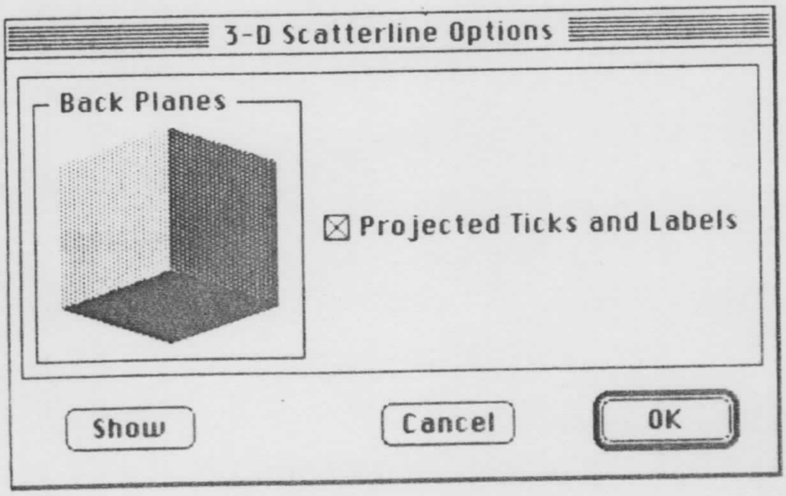
  Projected ticks and labels are drawn in perspective according to the settings in the "3-D View" dialog. Because true perspective is available only in PostScript output, you may want to turn them off if you are outputting to a QuickDraw printer or to a PICT file.
- Back Planes (turns any or all three back planes on or off; default setting is "on")

  To turn back planes on or off, click on the plane(s) you want to change.
- Drop Lines (lets you change the plane to which the lines are projected; you can choose one of the three combinations: XY, XZ, or YZ)
- Symbol Orientation (lets you change the plane on which the symbols are drawn; you can choose one of the three combinations: XY, XZ, or YZ)

To change the line or symbol orientation, click on one of the axis combinations.

3-D Scatterline art options

This is the "3-D Scatterline Options" dialog:



☒ Projected Ticks and Labels

This dialog offers the following options for 3-D Scatterline charts:

- Projected Ticks and Labels (turns projected ticks and labels on or off; default setting is "off")

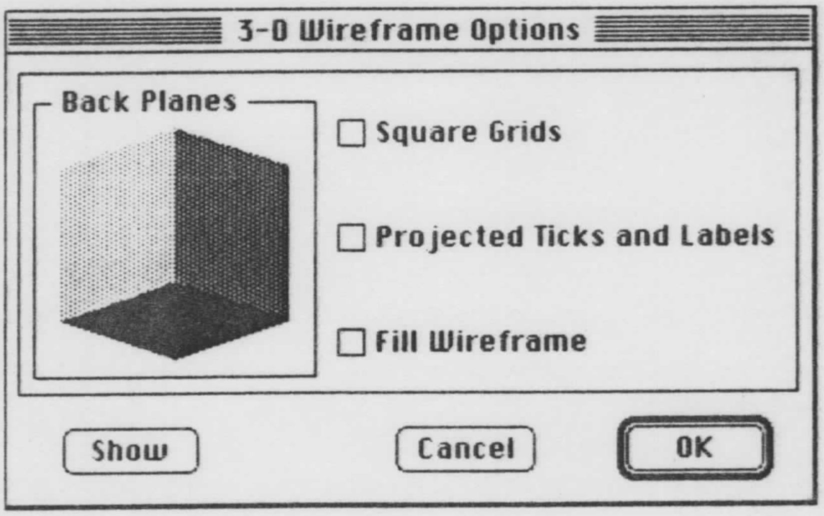
  Projected ticks and labels are drawn in perspective according to the settings in the "3-D View" dialog. Because true perspective is available only in PostScript output, you may want to turn them off if you are outputting to a QuickDraw printer or to a PICT file.

- Back Planes (turns any or all three back planes on or off; default setting is "on")

  To turn back planes on or off, click on the plane(s) you want to change.

3-D Wireframe chart options

This is the "3-D Wireframe Options" dialog:



3-D Wireframe Options

Back Planes

☐ Square Grids

☐ Projected Ticks and Labels

☐ Fill Wireframe

This dialog offers the following options for 3-D Wireframe charts:

- Square Grids (sets grids to square; default setting is "off")
- Projected Ticks and Labels (turns projected ticks and labels on or off; default setting is "off")

Projected ticks and labels are drawn in perspective according to the settings in the "3-D View" dialog. Because true perspective is available only in PostScript output, you may want to turn them off if you are outputting to a QuickDraw printer or to a PICT file.

- Back Planes (turns any or all three back planes on or off; default setting is "on")

  To turn back planes on or off, click on the plane(s) you want to change.

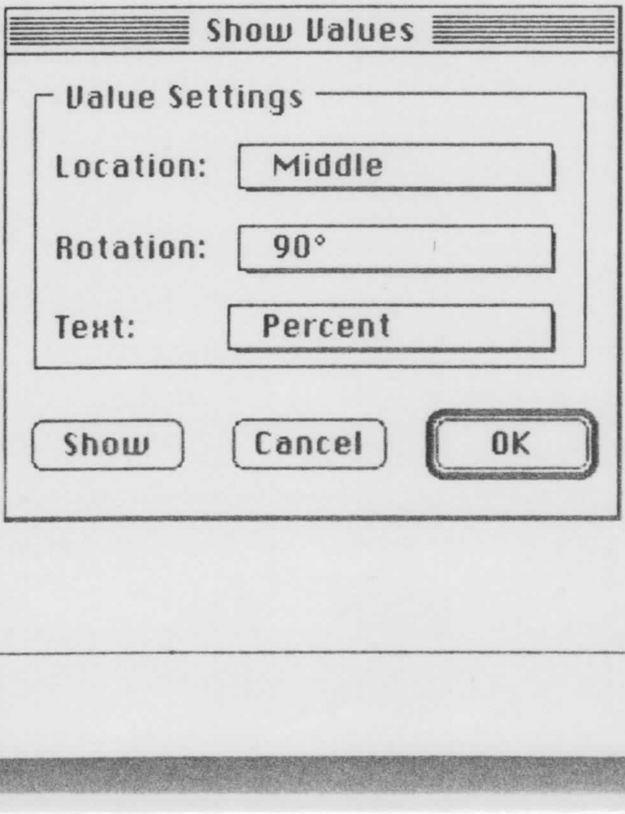
- Fill Wireframe (fills in wireframe so that colors and fill patterns can be added)

Showing Values

The **Show Values...** command lets you place the value of a column of numbers in the data graphic associated with it, such as the bars or pie wedges representing a data series. The **Show Values...** command is available on all two-dimensional charts except Area, Table, and Contour charts.

To show values on a chart:

1. Select the whole chart.
2. Choose the **Show Values...** command from the Chart menu. DELTAGRAPH displays the "Show Values" dialog.



Location: Middle

Rotation: 90°

Text: Percent

3. Select the location for the value from the pop-up menu next to "Location."

   For Column, Stacked Column, and Stacked Bar charts, the options are:

   - None (no value showing)
   - At Axis (value placed next to axis)
   - Middle (value placed in middle of data graphic)
   - At End (value placed at end of data graphic)
   - Outside (value placed outside the data graphic)

   For Pie and Stacked Pie charts, the options are:

   - None (no value showing)
   - Outside (value placed outside data graphic)
   - Inside (value placed inside data graphic)

   For Line, Step, Scatter, Range, High-Low, and Polar charts, the options are:

   - None (no value showing)
   - Above (value placed above the data symbol)
   - Below (value placed below the data symbol)
   - Left (value placed left of the data symbol)
   - Right (value placed right of the data symbol)
   - On (value placed directly on the data symbol — for best results with this option, the symbols should be turned off)

4. Select the orientation for the value from the pop-up menu next to "Rotation." The options are:

   - 0° (label is in default position, typically horizontal as in normal text orientation)
   - 90° (label rotates 90 degrees from 0, typically vertical, reading from top to bottom)
   - 180° (label rotates 180 degrees from 0, typically upside-down)
   - 270° (label rotates 270 degrees from 0, typically vertical and reading from bottom to top)

5. Select the type of value to place on the chart from the pop-up menu next to "Text." The options are:
   - Value (the number as it appears in the data window)
   - Percent (the percentage of each item within its category)
   - Category (the column label from the Notebook window)
   - Value (Percent) (the value with its percentage)
   - Category (Percent) (the category with its percentage)
6. Click on the Show button to preview the results without exiting the dialog. You can move the dialog out of the way by dragging the Title bar.
7. Click OK to make the change, or click Cancel to exit the dialog without changing the chart.

Adding Depth to 2-D Charts

You can use the **Depth...** command to add depth or a "shadow" to Column, Stacked Column, Bar, Stacked Bar, Pie, Stacked Pie, and Table charts.

The following diagram shows the depth planes on a two-dimensional chart.

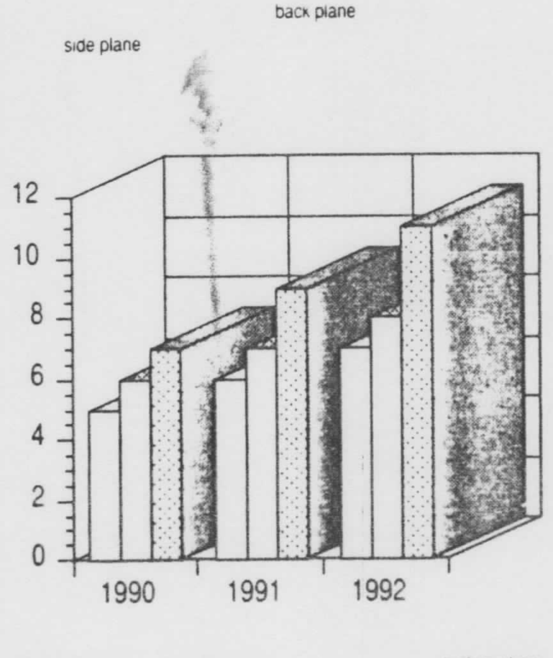
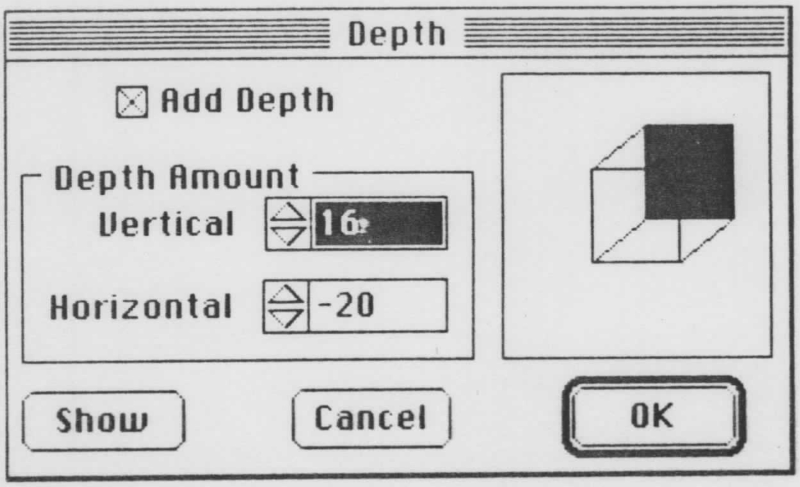


FIGURE 5-5. DEPTH PLANES ON A 2-D CHART

To add depth to two-dimensional charts:

1. Select a two-dimensional chart.

2. Choose the **Depth...** command from the Chart menu. The "Depth" dialog appears.



☒ Add Depth

Depth Amount

Vertical 16

Horizontal -20

3. The black box on the right side of the dialog is part of a cube that represents the data graphic; the outline represents the "shadow" of the depth.

   Click on the black box and drag it to any position you want. When you release the mouse, the "Add Depth" box will automatically be checked.

   You can also alter the vertical and horizontal depth of the chart by using the direction arrows under "Depth Amount," or by typing in any number, to change the setting. As you change the numbers, the cube moves to show you the result of your changes.

4. When you see a view that you like, click on the Show button to preview the results on the chart. You can move the dialog out of the way by dragging the Title bar.

5. Make changes as desired, then click OK to implement them. Click Cancel to exit the dialog without changing the chart.

Deleting a Chart

There may be times when you want to delete a chart you have made. There are several ways to do this.

To delete a chart:

1. Select the whole chart by clicking on it.
2. You can then press the Delete or Backspace key, or choose the **Cut** or **Clear** command from the Edit menu.

If you delete a chart by mistake, you can recover it by immediately choosing the **Undo** command from the Edit menu.

Deleting a chart does not remove the Chart window.

To delete the Chart window, choose the **Delete Chart Window** command from the Windows menu. DELTAGRAPH deletes the current Chart window when you click OK.

Using Error Bars

Error bars allow you to graphically illustrate the statistical probability of errors, actual errors, or a general approximation or "spread" in your data. Examples would include experimental errors in measurement, or untypical data points in comparison to the rest of the data.

You can use Error bars with the following two-dimensional charts: Line, Step, and Scatter.

Error bars appear as two short dashes for the upper and lower values of the spread, with a line connecting the two dashes at their centers. These three pieces of the Error bar are treated as one chart element in the chart, so you can, for example, make an "all red" error bar, but you cannot make red dashes with a blue connecting line.

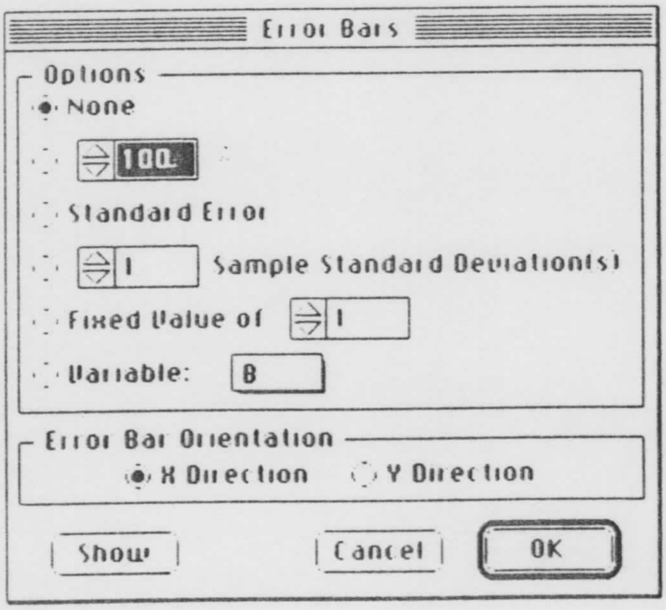
Note: If you need more graphic formatting control, and the underlying data is best represented as a line chart, use the **Functions...** command in the

Data menu, or do the calculations outside of DELTAGRAPH, and make a Range chart with high and low components, instead of a Line chart with Error bars.

In general, to add Error bars to a chart:

1. Select the whole chart.
2. Choose the **Error Bars...** command from the Chart menu.
3. Set the orientation of the Error bars by selecting the X or Y direction (Scatter chart only).
4. Select the type of Error bars you want.
5. Set any options for the particular type of Error bars you have chosen.
6. Click on the Show button to preview the effects on your chart. You can drag the dialog away from the viewing area by dragging the Title bar.
7. Click OK to implement the changes; click Cancel to exit the dialog without adding Error bars to your chart.

When you choose the **Error Bars...** command from the Chart menu, the following dialog appears:



Error Bars

Options

● None

○ 100

○ Standard Error

○ 1 Sample Standard Deviation(s)

○ Fixed Value of 1

○ Variable: B

Error Bar Orientation

● X Direction ○ Y Direction

The ends of each Error bar are determined by making selections or typing values into the "Error Bar" dialog. The following choices are available:

None No Error bars are drawn.

N% Each end of the Error bar is placed at the percentage entered in the dialog box, times the value of the data point. That percentage number is based on the scale of the axis and can be any value greater than or equal to zero.

Standard Error

Each end of the Error bar is placed at the standard error of the value of the data point. The standard error is computed as follows:

Standard Error = sqrt(sumSquare / ((count - 1)*(count)))

where

sqrt is the square root function;

sumSquare is the sum of the squares of all the data values in all the series plotted;

count is the number of valid data values plotted.

N Sample Standard Deviations

Each end of the Error bar is placed at a distance N*SD in user scale units from the computed value, M. N can be any number greater than or equal to zero. SD is the sample standard deviation computed as follows:

SD = sqrt(sumSquare / (count - 1))

where sqrt, sumSquare and count are defined as above and

M is the sum of all valid data values for all series, divided by count (that is, the arithmetic mean).

Note: This computation places the mean of all the series at the center of each Error bar, not the data values at the center of each Error bar. So, the position of the ends of each Error bar measured along the value axis is the same for each category (in the case of a Line chart or Step chart) or each data value (in the case of a Scatter chart). That is, all the Error bars "line up," instead of being "staggered" with the data.

Fixed Value of N

Each end of the Error bar is placed a distance from the data value equal to the number entered in the dialog box. That number is based on the scale of the axis and can be any value greater than or equal to zero.

Variable: Column

Each end of the Error bar is placed at a certain distance from the data value. That certain distance can be different for each category (in a Line chart or Step chart) or for each data value (in a Scatter chart). It must be placed in a column of the data sheet where the data to be plotted resides. Choose the name of the column from the pop-up menu to the right of the word "Variable."

Note: When using Error bars with a Scatter chart, each X component and Y component can independently have Error bars of any variety, including "None." Switch back and forth between components by clicking on the buttons under "Error Bar Orientation." When analyzing the data to determine where the error bars are placed, the above explanations are valid, as long as "data value" is replaced with "X component of the data value" or "Y component of the data value," as appropriate.

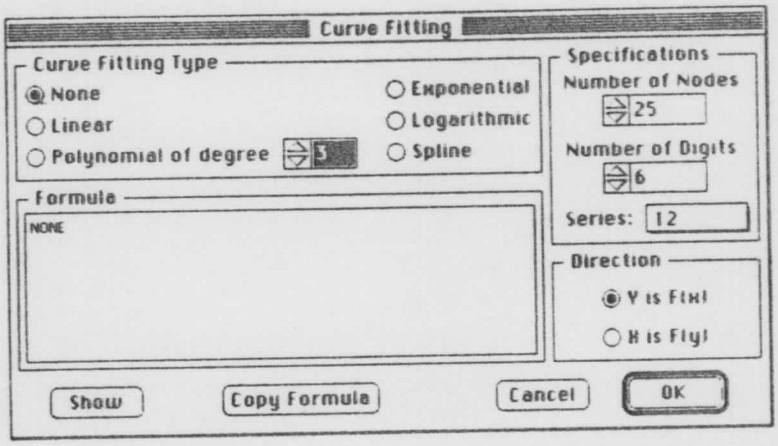
Curve Fitting

You can use the **Curve Fitting...** command to draw a curve that is "fitted" to the data values plotted. There are two classes of curve fitting: "spline" and "other." The spline curve must pass through all the data points. The other curves might not pass through any of the data points, but will be close to the data.

Curves can be added to Line, Step, and Scatter charts. Curves are fitted to particular series of data in your chart. You can draw curves for only one series, a selection of data series, or all.

Note: By their nature, the formulas used to derive curves in DELTAGRAPH are complex. At the risk of confusing some users, we've included fairly detailed explanations of the equations to help more statistically-oriented users understand the methods being used. If you find the math confusing, you can skip over the more technical passages. If you want to learn more about curve fitting, most college-level statistics textbooks can help.

When you choose the **Curve Fitting...** command from the Chart menu, the following dialog appears:



Curve Fitting Type:
● None
○ Linear
○ Polynomial of degree 3
○ Exponential
○ Logarithmic
○ Spline

Specifications:
Number of Nodes: 25
Number of Digits: 6
Series: 12

Formula: NONE

Direction:
● Y is F(x)
○ X is F(y)

In general, to draw a curve:

1. Select the whole chart.
2. Choose the **Curve Fitting…** command from the Chart menu.
3. Select the series you wish to fit a curve to by pressing on the pop-up menu next to "Series."
4. Choose the type of curve you want to draw.
5. If you want to, you can change the default number of nodes and digits or the direction of the curve.
6. Click on the Show button to preview the effects of your choices on your chart. You can move the dialog away from the viewing area by dragging the Title bar.
7. Click OK to implement the changes; click Cancel to exit the dialog without adding a curve to your chart.
8. If you want to fit curves to more data series, select a different series and repeat these steps.

Curve specifications

DELTAGRAPH draws all curves as Bezier curves. The dialog item labeled "Number of Nodes" under "Specifications" determines the number of Bezier nodes that the curve must pass through. For a spline curve, this number must be the number of valid data points plotted, so the dialog item is dimmed. For any other curve, you can use a number greater than 1 and less than 251.

In general, more nodes mean a more accurate representation. However, more than two nodes on a straight line are unnecessary, while a large number of nodes can use excessive memory.

Because DELTAGRAPH supports curve fitting to data whose value axis or axes are scaled by logarithm, the number of nodes for a linear fitted curve is not forced to two. If one value axis is scaled by logarithm, a linear fitted curve is not a straight line. However, if one value axis is scaled by logarithm, an exponential fitted curve is a straight line.

You can use a different type of curve fitting on each series of data in the chart. Choose the different series with the item labeled "Series" under "Specifications" in the dialog.

Curve fitting type

In all the curve fitting techniques, one or more functions are chosen to represent the best fit to the data. Every function must get its data from somewhere — the *domain* of the function. For these functions, the curve representing them will go from one end of the domain to the other.

Curve fitting on a Scatter chart is different from curve fitting on a Line or Step chart.

For Line and Step charts, the domain of the function is always the category numbers and all numbers in between them.

For the Scatter chart, the domain can be either the X axis or the Y axis. Here X and Y refer to the data components. The X component of data for the first series always comes from the first column of values selected; the Y component comes from the second column.

The X axis of a Scatter chart is horizontal when the Switch Axes chart option is off, but is vertical when the Switch Axes chart option is on. To specify which component of the data indicates the domain of the function, click on the buttons labeled "Y is F(x)" and "X is F(y)." "Y is F(x)" chooses the values on the X axis as the domain; "X is F(y)" chooses Y values for the domain.

When a Scatter chart with Spline curve fitting is selected, the "X is F(y)" and "Y is F(x)" buttons are dimmed. Two functions are calculated: one that returns X values and one that returns Y values. The domain for each function is the category numbers.

In the options discussed below, the values x(i) and y(i) are determined by the chart type and the "Y is F(x)" versus "X is F(y)" selection.

For a Line chart and a Step chart, the x(i) are the category numbers, starting at 1 for the first category. The y(i) are the values in each of those categories. (The "Y is F(x)" versus "X is F(y)" selection does not matter.)

For a Scatter chart, there are two cases:

- If "Y is F(x)" is selected, x(i) are the X components and y(i) are the Y components.
- If "X is F(y)" is selected, x(i) are the Y components and y(i) are the X components.

Linear

- For the function f(x) = ax + b, a and b are calculated so that the sum of the squares of the errors given by (f(x(i)) - y(i))^2 is minimized.
- f(x) = ax + b;

Logarithmic

For the function f(x) = a*ln(x) + b, a and b are calculated so that the sum of the square of the errors given by (f(x(i)) - y(i))^2 is minimized.

Exponential

For the function g(x) = A + b*x, A and b are calculated so that the sum of the square of the errors given by (g(x(i)) - ln(y(i)))^2 is minimized. Then a is calculated as a = ln(A) and the formula is displayed as f(x) = a*exp(b*x).

Polynomial

For the function f(x) = a(0) + a(1)*x + a(2)*x^2 + ... + a(n)*x^n a multiple linear regression is performed using 1, x(i), (x(i))^2,....(x(i))^n as the values of the independent variables and y(i) as the values of the dependent variable. The results are used for a(0), a(1), ..., a(n).

Spline

The formula is not displayed, because in general, it would be too long to fit in a fixed size text field.

For Line and Step charts:

- Over each interval between categories, the curve follows the function f(x) = a*x^3 + b*x^2 + c*x + d, that is a third degree polynomial. Each interval can have a completely different set a, b, c, and d.
- The domain of f (the values that x can take) are the category numbers at the data points plotted and all real numbers in between. The range of f (the values computed by f) are in the user scale for the value axis.
- The curve is smooth through the transitions from one third-degree polynomial to the next in the sense that the value of the function, its first and second derivatives at the right end of one interval, are equal to the corresponding values at the left end of the next interval to the right.
- Because category numbers are always increasing from 1 to the total number of categories, and also go from one end of the category axis to the other, the curve does not cross over itself.

For Scatter charts:

- Here the spline curve is defined by two functions. The x function is defined on the category number of the data values and all real numbers in between and takes on values in the user scale of the x axis, while the y function is defined on the category numbers and takes on values of the y axis.
- On each interval defined by adjacent category numbers, the curve follows the two functions:
  - x(t) = ax*t^3 + bx*t^2 + cx*t + dx
  - y(t) = ay*t^3 + by*t^2 + cy*t + dy

As with the Line chart and Step chart, the ax, bx, cx, and dx, as well as the ay, by, cy, and dy, may be different for each interval. They are calculated so that the function values, and their first and second derivatives, match up on interval boundaries.

Because the X and Y components of the data values can be listed in any arbitrary order, the X components are not necessarily increasing with category, and neither are the Y components. Therefore, the curve may cross over itself many times. If the desired curve should not cross itself, then the data should be sorted either by the X component or Y component (either externally to DELTAGRAPH or with the DELTAGRAPH "Sort" command in the Data menu).

Chapter 6

Drawing in the Chart Window

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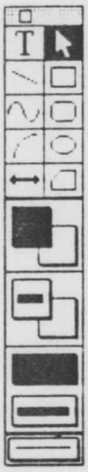
6 Drawing in the Chart Window



This chapter tells you how to use the Drawing palette in the Chart window to add graphic objects and text to your charts. It also explains how to use the commands in the Drawing menu to arrange the drawing objects you add to your chart.

See Figure 2-3 in Chapter 2 for a labeled illustration showing each drawing tool in the Drawing palette.

For a description of how to use foreground and background colors, fill patterns, and line patterns, see Chapter 5, "Editing Your Chart."

Adding Text

You can add text to a Chart window, then you can edit, format, move, copy, delete, and change the attributes of the text.

- Use the commands in the Text menu to change the font, size, style, alignment, and color of the text. You can add or remove drop shadows using the **Drop Shadow** command. The **Alignment** command displays a hierarchical menu with two parts. The first four options (Default, Left, Right, and Center) are for text you add to your chart; the last four options (Top, Middle, Bottom, and Baseline) are for text in Table charts and are dimmed unless a Table chart is selected.
- Use the line, color, and pattern tools in the Drawing palette to change the rectangular area (text object) in which the text is enclosed. Use the "N" (None) pattern for a transparent text object.

To add text to a Chart window:

1. Select the Text icon (shown at left) from the Drawing palette. The pointer changes to an I-beam.
2. Drag a rectangular area to contain the text. To help you draw the text object in the appropriate size, a dotted line appears as you drag the mouse. When

you release the mouse button, object handles appear to show you the text area, or text object. The insertion point is in the upper left corner of the text area.

3. Type the text.
4. Click the mouse outside of the text object to stop entering text. The object handles disappear, leaving only the text.

To select the text object:

1. Click on the Pointer icon in the Drawing palette.
2. Click on the text. The object handles reappear.

When the text object is selected, you can change the following:

- line pattern of the box
- fill pattern of the box
- line thickness of the surrounding box (which is invisible until you give it a color or pattern)
- foreground and background line colors
- foreground and background fill colors
- text font
- text size
- text style
- text alignment
- text color
- add a drop shadow to the text

You can change the font, size, style, and color of individual characters. All other attributes affect the entire text object.

To reshape the text, drag an object handle until the text object is the size and shape you want. The pointer changes to a crosshair with arrows, and a dotted line appears to show you the shape as you drag.

To move the text, place the pointer inside the text object and drag it to another location. The pointer changes to a crosshair with arrows, and a dotted line appears to show the outline of the text object.

To edit the text:

1. Choose the **View Size** command from the Windows menu and set the View Size to Actual, if it is not already set. You can edit text objects in Actual (100%) View Size only.
2. Select the text object. The object handles reappear.
3. Click on the Text icon in the Drawing palette. The I-beam pointer appears.
4. Click to position the insertion point where you want to edit text. You can:
    - use the arrow keys and Delete or Backspace keys to edit the text
    - type in more text
    - drag to select part of the text
    - double-click on a word to select it

You can use the commands in the Text menu to format your selection.

Note: Any previously existing background line, color, and pattern formatting of the text object temporarily disappears while the text is selected. You must click outside the text object to make the formatting reappear.

Adding Drawing Objects

This section describes how to add a line, square, rectangle, rounded rectangle, circle, oval, arc, regular or irregular polygon, and Bezier curve to your chart.

You can change the fill pattern, line pattern, foreground color, and background color of all these drawing objects and their lines.

You can move any object by selecting it, then dragging it to a new location in the Chart window.

Use the commands in the Edit menu to edit a rounded rectangle, polygon, arc, Bezier curve, or arrow.

You can use these key combinations to assist you when drawing objects:

⌘ – Drag	Constrains an object to the initial direction of movement when drawing an object or resizing an axis in the Chart window.
Shift – Drag	Constrains object handles to a square when drawing in the Chart window.
Option – Drag	Temporarily turns off "Snap to Grid" when drawing or moving objects in the Chart window.

Adding a line

To create a line:

1. Select the Line icon (shown at left).
2. Click in the Chart window where you want your line to start.
3. Drag the mouse in the direction you want your line. When you release the mouse, the line appears with its endpoints marked.

While the line is selected, you can increase or decrease the length or change the direction by dragging an endpoint. When you drag an endpoint or move the line, the pointer changes to a crosshair with arrows.

Holding down the Command key while creating or resizing a line will constrain it to a straight line in the original direction of movement.

Holding down the Option key while creating or resizing a line will temporarily defeat the "Snap to Grid" settings.

You can also change the line width, or specify a custom line width.

To change the line width, click on the Line-width palette, then select the line width you want from the pop-up menu. You can choose from a range of sizes, including "None," or specify a custom width.

To specify a custom width, select "Custom..." from the Line icon's pop-up menu. DeltaGraph displays the "Set Pen Weight" dialog. Use the direction arrows to scroll through the available point sizes, or enter a point size from 0 to 8. You can also enter decimal sizes.

Note: You can use the Line-width palette to change the width of any line in the Chart window.

Adding a rectangle, rounded rectangle, square, circle, or oval

Use the Rectangle icon to make a square or a rectangle. Use the Oval icon to make an oval or a circle. Use the Rounded Rectangle icon to make a rounded rectangle.

To create a rectangle, rounded rectangle, square, circle, or oval:

1. Select the Rectangle, Rounded Rectangle, or Oval icon (shown at left) from the Drawing palette. The pointer changes to a crosshair.
2. Click in the Chart window where you want the object to start.
3. Drag the mouse in any direction until your figure is the size and shape you want. A dotted outline of the shape appears as you drag the mouse; when you release the mouse, the figure appears with object handles around it.

While the figure is selected, you can change the size and shape by dragging an object handle. When you drag, the pointer changes to a crosshair with arrows.

To move an object, select it, then place the pointer inside the object and drag it to a new location. When you drag, the pointer changes to a crosshair with arrows.

Holding down the Shift key while creating or resizing a rectangle, rounded rectangle, or oval will constrain the object to a square, rounded square, or circle.

Holding down the Option key while creating or resizing a rectangle, rounded rectangle, or oval will temporarily defeat the "Snap to Grid" settings.

See "Editing a rounded rectangle," later in this chapter, for instructions on using the **Edit Round Corners** command in the Edit menu.

Adding a polygon

To create a polygon:

1. Select the Polygon icon (shown at left) from the Drawing palette. The pointer changes to an X.
2. Click in the Chart window where you want to begin the polygon. A small circle appears to indicate the starting point.

3. Release the mouse.
4. Move the mouse until the X on the screen is where you want the first side of the polygon to end, then click.

   You can drag this point to get it just where you want it before releasing the mouse button. The first segment of the polygon appears when you release the mouse button.
5. Move the mouse and click again to create the second segment. At this point object handles appear to indicate the boundaries of the object. (Object handles appear after placing the first segment if the line is drawn on any kind of angle.)
6. Continue moving and clicking the mouse until you have created the polygon you want. You can close the polygon by clicking on the first point, but you do not have to close the polygon to finish it.
7. To end the polygon, choose the Pointer icon or another icon.

You can change the patterns, colors, and line-widths of the polygon while you are creating it.

While the polygon is selected, you can change the size and shape by dragging an object handle. When you drag, the pointer changes to a crosshair with arrows.

To move a polygon, place the pointer inside the polygon, then drag it to a new location. When you drag, the pointer changes to a crosshair with arrows.

Holding down the Command key while creating or resizing a polygon will constrain each segment to a straight line in the original direction of movement from the previous drawing point.

Holding down the Option key while creating or resizing a polygon will temporarily defeat the "Snap to Grid" settings.

See "Editing a polygon," later in this chapter, for instructions on using the **Edit Polygon** command in the Edit menu.

Adding an arc

You can create an arc that is transparent (Pattern palette is set to "N" or white), or filled with a color or pattern.

To create an arc:

1. Select the Arc icon (shown at left) from the Drawing palette. The pointer changes to a crosshair.
2. Click in the Chart window where you want the arc to start.
3. Drag the mouse diagonally in any direction. A dotted line appears on the screen to help you get the shape you want. When you release the mouse, the arc appears with object handles and is closed.

While the arc is selected, you can change the size and shape by dragging an object handle.

To move an arc, place the pointer inside the arc, then drag it to a new location. When you drag, the pointer changes to a crosshair with arrows.

Holding down the Shift key while creating or resizing an arc will constrain the object to a square.

Holding down the Option key while creating or resizing an arc will temporarily defeat the "Snap to Grid" settings.

See "Editing an arc," later in this chapter, for instructions on using the **Edit Arc** command in the Edit menu.

Making a Bezier curve

To create a simple or compound curve:

1. Select the Bezier Curve icon (shown at left) from the Drawing palette. The pointer changes to a crosshair.
2. Click the mouse once where you want to start your curve. A circle marks the beginning of the curve.
3. Move the mouse until the crosshair on the screen is where you want the first segment of your curve to end, then click again.

   If you release the mouse, a line appears between the first and second points.

   If you hold down the mouse button and drag, a tangent line appears that allows you to drag the curve into the shape you want. Drag down to make an n-shaped curve. Drag up to make a u-shaped curve.

4. Release the mouse button. The tangent line disappears, and object handles appear around the curve to show it is selected.

5. Continue positioning and dragging until your curve is complete. DeltaGraph automatically connects the curve segments.

6. Click the Pointer icon to complete the curve. The object handles disappear.

You can also create a shape with the Bezier tool by clicking, moving the pointer, and clicking again, to make a series of segments. DeltaGraph automatically connects the segments. Click the Pointer icon to complete the shape.

Holding down the Command key while creating or resizing a Bezier curve will constrain each tangent to a straight line in the original direction of movement from the drawing point.

Because the smoothness of a Bezier curve is dependent on the exact placement of it's points, the Bezier curve tool is not affected by the grid settings of the Chart Window. A Bezier curve will not "Snap to Grid".

See "Editing a Bezier curve," later in this chapter, for instructions on using the **Edit Bezier Curve** command in the Edit menu.

Adding an arrow

To create an arrow:

1. Select the Arrow icon (shown at left).

2. Click in the Chart window where you want your arrow to start.

3. Drag the mouse in the direction you want your arrow to point. When you release the mouse, the arrow appears with its endpoints marked.

⟷

While the arrow is selected, you can increase or decrease its length or change its direction by dragging an endpoint. When you drag an endpoint or move the arrow, the pointer changes to a crosshair with arrows.

Holding down the Command key while creating or resizing an arrow will constrain it to a straight line in the original direction of movement.

Holding down the Option key while creating or resizing an arrow will temporarily defeat the "Snap to Grid" settings.

You can also change the line width, or specify a custom line width.

To change the line width, click on the Line-width palette, then select the line width you want from the pop-up menu. You can choose from a range of sizes, including "None," or specify a custom width.

To specify a custom width, select "Custom..." from the Line icon's pop-up menu. DELTAGRAPH displays the "Set Pen Weight" dialog. Use the direction arrows to scroll through the available point sizes, or enter a point size from 0 to 8. You can also enter decimal sizes.

See "Editing an arrow," later in this chapter, for instruction on using the **Edit Arrow** command in the Edit menu to change the endpoints.

Editing Drawing Objects

You can change the size and shape of a drawing object. You can also move, delete, copy, and duplicate an object. To edit an object, you might need to use the **Send** command in the Drawing menu to move the object so you can select it.

To edit certain aspects of a rounded rectangle, polygon, arc, Bezier curve, or arrow you must use special editing commands in the Edit menu.

For instructions on changing foreground and background colors, line thickness, and fill patterns, see Chapter 5, "Editing Your Chart."

Editing a rounded rectangle

You can change the shape of a rounded rectangle by dragging any of the object handles. You can alter the curvature of the corners, ranging from oval to square, using the **Edit Rounded Corners** command in the Edit menu.

To change the corners of a rounded rectangle:

1. Select the rounded rectangle. Object handles appear.
2. Choose the **Edit Rounded Corners** command in the Edit menu. All but the bottom right object handle disappears.

3. Press on this object handle and drag down to make the corners more round. Drag up to make the corners more square. While you are dragging, a dotted line appears to show you the results.
4. Click outside the rectangle to end the edit.

Editing a polygon

You can change the dimensions of a whole polygon by selecting it, then dragging one of the object handles. To change the angle of one side of the polygon, you must use the **Edit Polygon** command.

To edit a polygon:

1. Select the polygon. Object handles appear.
2. Choose the **Edit Polygon** command from the Edit menu. The object handles disappear, and circles appear at the endpoints of the polygon.
3. Drag each circle until the polygon is the shape you want. When you drag, a dotted line appears to show you the new shape. DeltaGraph automatically reconnects the line segments that were connected in the original polygon. Segments that were not connected can be moved farther apart or closer together.
4. Click outside the polygon to end the edit.

Note that you can still move the polygon by dragging inside it while **Edit Polygon** is active.

Editing an arc

To edit an arc:

1. Select the arc. Object handles appear to show it is selected.
2. Choose the **Edit Arc** command from the Edit menu. Object handles appear at the endpoints of the arc.
3. Drag the endpoints to change the angle of the arc. A gray line appears to show you the angle the arc is creating.

Editing a Bezier curve

When you create a Bezier curve, you click every time you change the direction of the curve. When you edit a Bezier curve, the points at which you changed direction are the points at which you can make changes to the curve.

To edit a Bezier curve:

1. Select the Bezier curve. Object handles appear to show it is selected.
2. Choose the **Edit Bezier Curve** command from the Edit menu. Object handles appear at each point where you clicked to change the direction of the curve when you created it.
3. Drag the handle of the point you want to change in the direction you want to move the curve. A line with small circles at the endpoints appears tangent to the curve you dragged.
4. You can drag either end of the tangent line to further change the curve.
5. Click outside the curve to end the edit.

If the segment is straight, the tangent line does not appear; you just drag the object handle.

Editing an arrow

You can edit an arrow to have arrowheads at either or both ends. You can also change the length and height of the arrowhead.

To edit an arrow:

1. Select the arrow. Object handles appear.
2. Choose the **Edit Arrow** command from the Edit menu. The "Set Arrowhead Size" dialog appears.
3. Click on "Left End," "Right End," or "Both Ends," depending on where you want the arrowhead(s).
4. Use the direction arrows, or enter a height from 3 to 30 and a length from 4 to 40. The arrows in the dialog change with the numbers to show you the results of your settings.

5. When you see the size you want, click OK to make the change; click Cancel to exit the dialog with no change.

You can use the fill palettes to change the color or pattern of the arrowhead.

Resizing Objects

To change the size or shape of a drawing object:

1. Select the object by clicking on it. The object handles appear.
2. Place the pointer on a handle.
3. Drag the handle until the object is the size or shape you want. When you drag a handle, the pointer changes to a crosshair with arrows.

This action can be undone by selecting the **Undo** command from the Edit menu.

Holding down the Command key while resizing drawing objects will constrain the mouse to a straight line in the original direction of movement.

Holding down the Shift key while resizing a rectangle, rounded rectangle, oval, or arc will constrain the object to a square, rounded square, circle, or symmetrical arc.

Holding down the Option key while resizing drawing objects will temporarily defeat the "Snap to Grid" settings.

Note: You cannot change the size of data graphics or other chart elements, such as bars or labels, in this manner. Chart elements, except for the axes, can only be resized through the appropriate menu commands, or by changing the data in the Notebook window.

Moving Objects

To move an object:

1. Select the object by clicking on it. If the object is not filled, you must select the border. The object handles appear.
2. Place the pointer inside the object.

3. Drag the object until it is where you want it. When you drag the object, the pointer changes to a crosshair with arrows. A dotted line indicating the size of the object moves as you drag. The object appears when you release the mouse button.

This action can be undone by selecting the **Undo** command from the Edit menu.

Deleting Objects

To delete an object:

1. Select the object by clicking on it. The object handles appear.
2. Choose the **Cut** or **Clear** command from the Edit menu, or press the Delete key. The **Cut** command, which can be invoked by pressing ⌘–X, places a copy of the object in the Clipboard; the **Clear** command and the Delete key do not.

This action can be undone by selecting the **Undo** command from the Edit menu.

Copying Objects

The **Copy** command is most useful when you want to copy an object from one window to another. Use the **Duplicate** command to copy an object to the same window.

To duplicate an object:

1. Select the object.
2. Choose the **Duplicate** command from the Edit menu, or press ⌘–D. The duplicate appears slightly offset from the original in the Chart window.
3. While the new object is selected, place the pointer inside it, then drag it to the location you want.

Note: You cannot duplicate a chart. Charts must maintain links to specific ranges of data, while the **Duplicate** command simply makes a copy of a drawing object. To create identical charts, create a Custom chart type of the first chart, reselect your data, then plot a new chart using the newly created Custom chart type.

To copy an object:

1. Select the object.
2. Choose the **Copy** command from the Edit menu, or press ⌘–C.
3. Deselect the object by clicking outside it. (The **Paste** command is dimmed until you deselect the object.)
4. Choose **Paste** from the Edit menu, or press ⌘–V. The copy appears in the upper left-hand corner of the window.
5. While the new object is selected, place the pointer inside it, then drag it to the location you want.

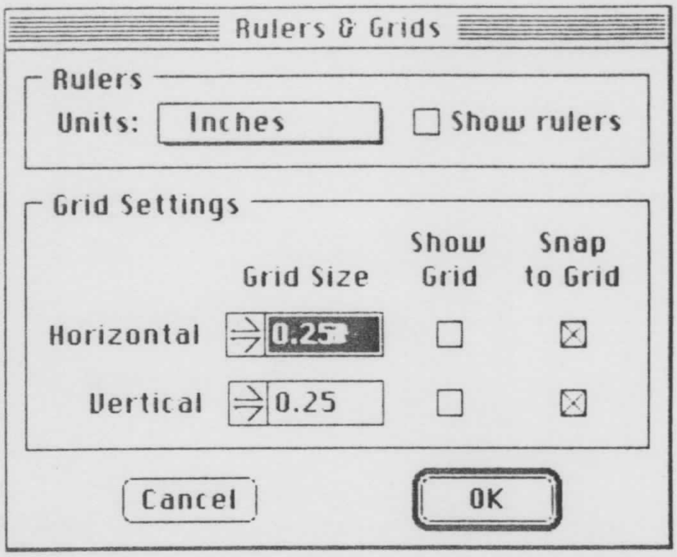
To copy an object to another window:

1. Select the object.
2. Choose the **Copy** command from the Edit menu.
3. Choose the Chart window you want from the Windows menu, or choose the **New Chart Window** command.
4. Choose the **Paste** command from the Edit menu. The copy appears in the active Chart window.

Note: You can copy a chart to the Clipboard to be pasted into the Scrapbook or another application as a PICT object, but it cannot be pasted back into DELTAGRAPH. If you really want a PICT version of a DeltaGraph chart, you can copy it, paste it to the Scrapbook or another application, recopy it, then paste it back into DELTAGRAPH.

Changing Ruler Settings

To change the ruler settings, choose the **Rulers & Grids...** command from the Drawing menu. This command displays the "Rulers & Grids" dialog. You can move this dialog away from the viewing area by dragging the Title bar.



Rulers & Grids

Rulers

Units: Inches ☐ Show rulers

Grid Settings

	Grid Size	Show Grid	Snap to Grid
Horizontal	0.25	☐	☒
Vertical	0.25	☐	☒

You can choose from the following measurement options:

- Inches (the default setting)
- Centimeters
- Points (1/72 of an inch)
- Picas (12 points, or 1/6 of an inch)

To show rulers in the Chart window, click on the "Show Rulers" check box; click again to make the rulers disappear.

The grid settings in this dialog apply to the underlying drawing grid in the Chart window, not to the grids in the chart. The range of available horizontal and vertical grid settings varies with the unit of measurement you choose. Use the direction arrows to scroll through the available settings until you see the one you want. You can also type in your own settings.

To display the horizontal and vertical drawing grids, click on the "Show Grid" check boxes. (Click again to turn them off.)

To disable "Snap to Grid," which automatically aligns charts and drawing objects with the grids, click on the check boxes.

Note: Rulers & Grids settings apply only to the active Chart window. You can specify different settings for each Chart window in your Notebook.

Grouping and Ungrouping Objects

Grouping allows you to treat several individual elements or objects as one object. This is useful if you want to move several objects and maintain their relative spacing, or if you want to change the pattern or color of several objects at the same time.

Use the **Ungroup** command to return previously grouped objects to their individual state.

To group objects:

1. Drag the mouse to surround the objects you want grouped, or click on one object, then press the Shift key while clicking on the other objects until you have selected all the objects you want. Object handles appear around each selected object.
2. Choose the **Group** command from the Drawing menu. The objects are now marked by one set of object handles, showing that they are being treated as one object.

Note that you can group a whole chart with other objects.

To ungroup objects:

1. Select the object to ungroup.
2. Choose the **Ungroup** command from the Drawing menu. Object handles appear around each object, showing that the objects are returned to their individual state.

Note: The **Ungroup** command will only work on objects previously grouped with the **Group** command. You cannot ungroup the elements of a chart.

Aligning Objects

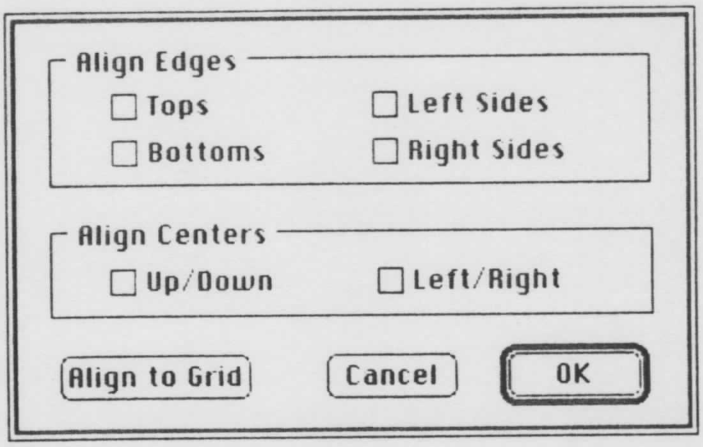
The **Align...** command lets you align charts, drawing objects, and text objects according to their edges, their centers, or the drawing grid.

To align objects:

1. Select the objects you want to align.

Remember, to select multiple objects, you must press the Shift key while making your selections.

2. Choose the **Align...** command from the Drawing menu. You will see the following dialog:



3. Decide whether you want to align the edges or the centers of the objects, and/or align to the drawing grid.

4. Click in the appropriate check box(es).

5. Click OK, or click Cancel to exit the dialog without making any changes.

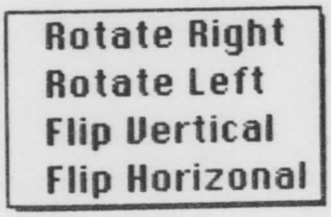
Rotating Objects

The **Rotate** command lets you rotate a drawing or text object in 90-degree increments, or flip the object 180 degrees vertically or horizontally, without having to redraw the object.

To rotate a drawing object:

1. Select the object or objects to rotate.

2. Choose the **Rotate** command from the Drawing menu to display the hierarchical menu. While the menu is displayed, select one of the options:



- Rotate Right
- Rotate Left
- Flip vertical
- Flip Horizontal

3. Release the mouse button. The object is reoriented according to your choice.

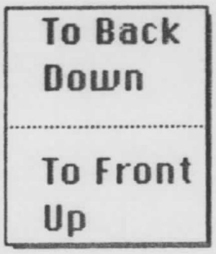
Note: You cannot rotate or flip charts and imported PICT and EPSF objects. You can rotate a text object, but you cannot flip it.

Layering Objects

Layering allows you to place a selected object on top of or underneath another element. DELTAGRAPH allows an unlimited number of layers in the Chart window.

To move a drawing or text object up or down a layer:

1. Select the object or objects.
2. Choose the **Send** command from the Drawing menu. This command displays a hierarchical menu with the following options:



- To Back (moves the element to the bottom layer)
- Down (moves the element down one layer)
- To Front (moves the element to the top layer)
- Up (moves the element up one layer)

3. Highlight the option you want, then release the mouse button. The selected object moves accordingly.

Note: DELTAGRAPH remembers layers in the same order that you created or placed each object. If it appears that an object is not moving, move it again: you might have drawn an object in another part of the chart that is inserting a layer between the objects you're trying to move.

Chapter 7 Importing and Exporting Graphics

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7 Importing and Exporting Graphics

DeltaGraph lets you import and export graphics to and from the active Chart window.

Importing Graphics

You can import graphics in the following formats:

- PICT (standard Macintosh format for bit-mapped and object-oriented graphics)
- EPSF (Encapsulated PostScript File)

To import a PICT or EPSF graphic into an active Chart window:

1. Choose the **Import** command from the File menu and select PICT or EPSF, depending on the file format of the graphic you want to import. DeltaGraph displays the standard Macintosh dialog for opening a document.
2. Select the PICT or EPSF document you want to import. The graphic arrives in the upper left-hand corner of the Chart window, on top of any existing graphics in that area of the window.

   The visible object handles indicate that the graphic is selected and ready to be placed.

At this point you can move it as you would any other graphic in the Chart window. However, you cannot ungroup or edit an imported PICT or EPSF graphic.

Exporting Graphics

If you want to use your DELTAGRAPH charts in other applications, you can use the Export command to save DELTAGRAPH graphics in the following file formats:

- Adobe Illustrator 1.1 (readable by Illustrator 88 and Aldus Freehand™ 2.0)
- PICT
- EPSF (Encapsulated PostScript File)

To save your graphics as an Adobe Illustrator, PICT, or EPSF document for export to another application:

1. Make sure the Chart window with the graphics you want to export is active.
2. Choose the **Export** command in the File menu and select Adobe Illustrator 1.1, PICT, or EPSF.

   A dialog appears allowing you to name and save the export file.

   DELTAGRAPH displays a default name for the document under "Export to:" in the dialog; it consists of the active Chart window name, a period, and, depending on the format you chose, either "ill," "eps," or "pict."
3. Use the default name or enter another name, choose your destination, then click on Save. The graphic is written to the selected disk and folder, under the format and name you specified.

Note: Choosing PICT will export all graphic elements in the window to your file. Choosing EPSF or Illustrator will export all elements in a 12" by 12" area, beginning with the upper left hand corner of the window.

DELTAGRAPH charts and drawing objects that you save as PICT files can be modified in any drawing application (such as MacDraw II or Canvas) that converts PICT files to its own native format

DELTAGRAPH charts and drawing objects saved as Adobe Illustrator files can be modified by Illustrator 1.1, Illustrator 88, and Aldus Freehand 2.0. (You might need to ungroup the graphic to modify it.)

DELTAGRAPH charts and drawing objects saved as EPSF files, however, can*not* be modified after being exported, except to be resized or cropped.

Considerations for exporting

Here's a list of things to keep in mind when exporting DELTAGRAPH graphics.

- Some drawing packages do not recognize all of DELTAGRAPH's patterns. You might need to adjust some patterns and text objects after you import a DELTAGRAPH chart into another application.
- When saving a chart in Adobe Illustrator format, graduated fills are converted to a solid color, and some Macintosh patterns are not available in the importing application.
- When you are saving a chart in the PICT format, keep in mind that PICT graphics cannot display perspective text on a three-dimensional chart. You can use the **Options...** command in the Chart menu to turn off projected ticks and labels; they are then aligned at 90-degree angles.
- When saving a chart in EPSF (Encapsulated PostScript Files) format, all of the gray shading, colors, special fills, and projected text are preserved.
- When you are exporting EPSF or Illustrator formats, the text in a text object must be one font, one size, and all in one style. For example, you can export a text object that is 10-point Helvetica bold italic, but you cannot export a text object that is a combination of two or more fonts or sizes. Text objects containing mixed text are converted to the font, size, and style of the first character in the text object.
- When exporting EPSF files, remember that, because the PostScript font name is different from the Macintosh font name, you might need to respecify the fonts, sizes, and text styles in the importing application in order to download the correct fonts to the output driver.

Chapter 8 Printing Charts and Data

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8 Printing Charts and Data

This chapter discusses printing to different output devices from DeltaGraph.

DeltaGraph provides the highest resolution possible to both PostScript and QuickDraw printers. This gives you the widest range of output choices available, including PostScript printers such as the Apple LaserWriter family, Linotronic and other high-resolution typesetters, color Postscript printers, and film recorders. You can also print to any QuickDraw output device, including Apple ImageWriters, non-PostScript laser printers, color QuickDraw printers, film recorders, and plotters.

Because DeltaGraph contains certain PostScript features that may not be appropriate for QuickDraw printers, it is helpful to determine what type of output device you will be printing to before you begin.

PostScript vs. QuickDraw

The Macintosh uses two different languages to create output: QuickDraw and PostScript.

QuickDraw provides output to the Macintosh screen and to output devices. Because it has a relatively low resolution of 1/72 of an inch, it is limiting to higher resolution output devices. Apple adopted Adobe Systems' PostScript language as an alternative way of providing output to printers. PostScript provides a much higher resolution of 1/256 of a point (a point is approximately 1/72 of an inch).

Most Macintosh applications still use QuickDraw for both screen display and output. When printing to a PostScript device, these applications use a print driver to translate QuickDraw output into PostScript.

A much smaller group of applications allows you to manipulate and edit shapes and lines as true PostScript objects. In other words, you can specify exactly the size or shape you want the object to be in very high resolution. Adobe Illustrator and Aldus Freehand are examples of this type of program. DeltaGraph also creates its drawing and chart objects as true PostScript.

Printing with PostScript

DELTAGRAPH was designed to provide high quality PostScript output. Having true PostScript objects gives you much more control over your drawing objects and charts, and much higher resolution when printing to a PostScript device.. For example, you can set the pen weight of your lines in fractions of points. It also allows such special effects as true perspective labels and projected ticks in 3-D charts, the smooth ramping of graduated fill patterns in special fills, and smooth gray-scale patterns.

The most common PostScript printers for the Macintosh are the Apple LaserWriters. DELTAGRAPH supports versions 5.2 and 6.0 of the Apple LaserWriter drivers. Version 6.0 is recommended, because of its support for converting color to gray-scale patterns.

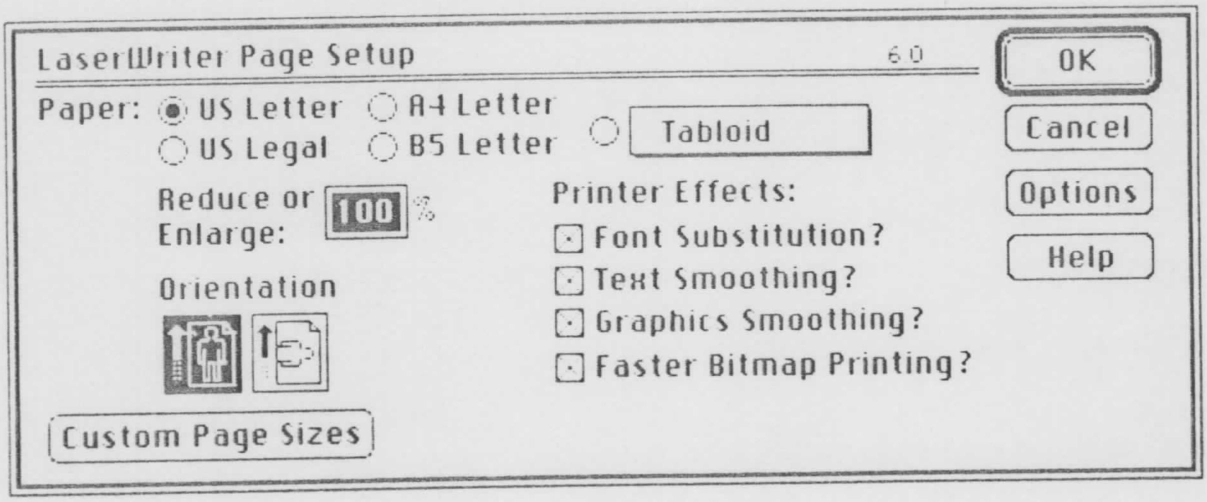
When using a PostScript device, keep in mind that percentages of gray shades print much faster than Macintosh patterns. When using special color and pattern fills, note that although pattern fills are different from color fills on a monochrome monitor, when printing to a black-and-white PostScript printer, special color fills will print as special pattern fills.

Printing with QuickDraw

ImageWriter printers, dot-matrix printers, plotters, many color printers, and most slide makers, use QuickDraw routines in their device drivers. Certain DELTAGRAPH features are designed for PostScript output and should not be used with QuickDraw output. Projected ticks and labels should be turned off in 3-D charts. Also, although you can specify the pen weights of lines to be fractions of a point, they will be rounded to the nearest full point size when printed. You can use graduated fill patterns and gray-scale patterns, but the output you get will be lower resolution.

Using Page Setup

The following "Page Setup" dialog appears when you are printing to an Apple LaserWriter Plus with LaserWriter driver version 6.0. Many PostScript printers will show a dialog with similar options. Consult the manual for your printer, plotter, or film recorder for information about the standard options that appear in your "Page Setup" dialog. The options supplied with DELTAGRAPH are described in this chapter.



LaserWriter Page Setup 6.0

Paper: ● US Letter ○ A4 Letter ○ Tabloid
○ US Legal ○ B5 Letter

Reduce or Enlarge: 100 %

Orientation

Printer Effects:
☑ Font Substitution?
☑ Text Smoothing?
☑ Graphics Smoothing?
☑ Faster Bitmap Printing?

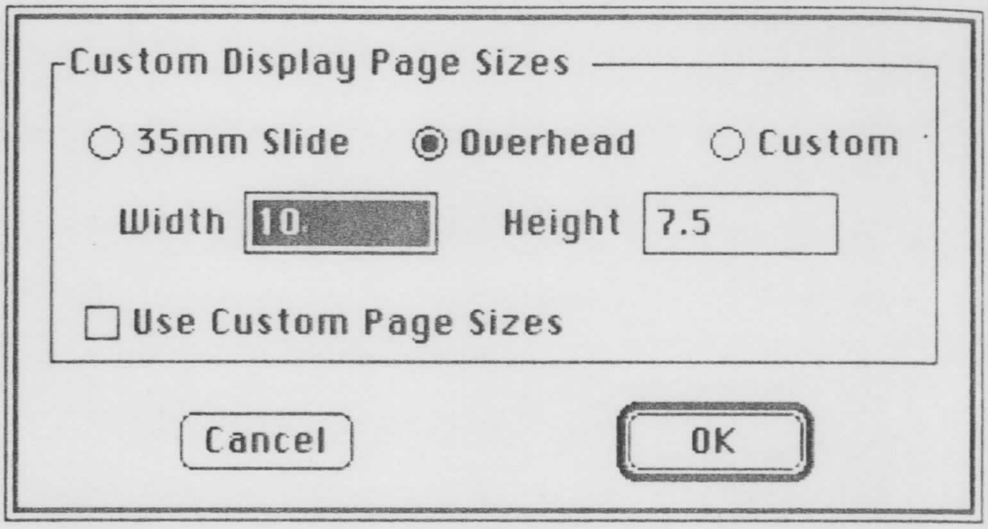
Using Custom Page Sizes

DELTAGRAPH adds a special Custom Page Sizes button and accompanying dialog to all "Page Setup" dialogs. This option allows you to set on-screen page breaks showing the proper image size or aspect ratio for non-standard page sizes such as slides or overhead projections.

It is important to remember that changing the Custom Size *does not* change the actual paper size of your output device. That must be changed in the main "Page Setup" dialog.

Also, make sure your printer is supplied with paper large enough to accommodate the page size you choose.

When you click on the Custom Page Sizes button, the following dialog appears:



Custom Display Page Sizes

○ 35mm Slide ● Overhead ○ Custom

Width: 10

Height: 7.5

☐ Use Custom Page Sizes

Click on "35mm Slide" to set a page size for output to slides. The printed output is 9" x 6", to correspond to the correct aspect ratio of a 35mm slide.

Click on "Overhead" to make overhead projections. You must have a paper tray wide enough for a 10" x 7.5" sheet.

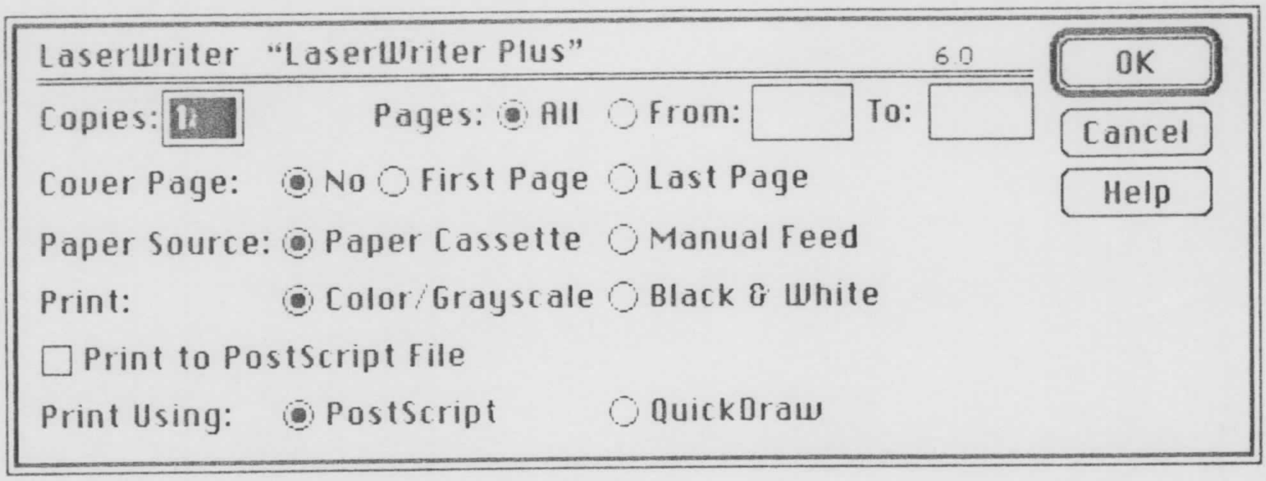
Click on "Custom" to enter a width and height of your choice.

Remember to click on the "Use Custom Page Sizes" check box to put these options into effect.

Note: If you set a custom size to be wider than it is high, set the orientation in the main "Page Setup" dialog to Landscape mode.

Using the Print Dialog

The following "Print" dialog appears when you are printing to an Apple LaserWriter Plus with LaserWriter driver version 6.0. Many PostScript printers will show a dialog with similar options. Consult the manual for your printer, plotter, or film recorder for information about the standard options that appear in your "Print" dialog.



LaserWriter "LaserWriter Plus" 6.0

Copies: 1 Pages: ● All ○ From: To:

Cover Page: ● No ○ First Page ○ Last Page

Paper Source: ● Paper Cassette ○ Manual Feed

Print: ● Color/Grayscale ○ Black & White

☐ Print to PostScript File

Print Using: ● PostScript ○ QuickDraw

The "Color/Grayscale" and "Black & White" options are specific to LaserWriter driver version 6.0. Select the "Color/Grayscale" option to convert colors in DELTAGRAPH to gray-scale equivalents on a LaserWriter. The "Black & White" option will convert all colors to black output.

DELTAGRAPH adds two unique selections to every "Print" dialog: the "Print to PostScript File" check box, and a "Print Using:" option that lets you print as PostScript or QuickDraw.

Use the "Print to PostScript File" option to produce a PostScript disk file of the active Chart window. This is for output devices that do not print directly from an application, but require a PostScript disk file to generate printed pages. The files will be named "PostScript0," "PostScript1," and so forth, and will be created in the main directory of the current start-up disk. (If you are using MultiFinder with Background Printing turned on, they will be created in a "Spool Folder" inside your System folder.)

To use the "Print Using:" option, simply select PostScript or QuickDraw, depending on the type of printer you are using. This option allows DELTAGRAPH to print with the highest resolution possible for your particular output device. If you are not sure what type of printer you have, consult the printer manual.

You can print QuickDraw output to a PostScript printer if you need to test how the output appears on a QuickDraw device, but resolution will be low. You cannot print PostScript to a QuickDraw device.

Printing in Color

DELTAGRAPH was designed to offer you full color capabilities both on the screen and in your output. Here is an overview of how to get the best color output.

QuickDraw color devices convert the colors displayed on your monitor to the color matching system used in their device. The accuracy of the matching varies depending on the device and the driver. In general, QuickDraw printers tend to print images darker than they appear on your monitor, but this may vary.

PostScript color printers convert the colors from actual PostScript color commands that are assigned to each possible color. Because of variations between monitors and individual output devices, printed colors may still vary from the screen output; in general, however, they will provide a much more accurate representation. Also PostScript does not support background colors. Any color PostScript printing will show the background color as white.

Using Plotters

To output to a plotter you must have an appropriate driver for your particular plotter. If the plotter manufacturer cannot supply you with a driver for use with the Macintosh, you can use a third-party driver, such as MacPlot™ from Micro-Spot™. Use the "Page Setup" and "Print" dialog options for the particular driver, making sure to set the PostScript or QuickDraw option according to your plotter type.

Note: Since most plotters use QuickDraw output, be sure to turn off projected ticks and labels in 3-D Charts.

Using Film Recorders

Film recorders (or slide printers) use a wide variety of printing methods. Some use Chooser-level print drivers that print directly from the application, while many require charts and drawing objects to be exported as PICT files, Encapsulated PostScript Files (EPSF), or PostScript disk files that are then imported into applications specifically designed to print to a film recorder.

For film recorders that do not print directly from the application, it may be helpful to set the Custom Page Sizes settings to 35mm film. This will show page breaks that display the proper aspect ratio for your slide output.

Most slide output bureaus can create slides directly from PICT files. Some also support PostScript files. Determine your slide bureau's requirements before creating and sending off your files.

Printing Notebook Data

Sometimes you will want to print the data in the Notebook window. DELTAGRAPH prints all the data in the active Notebook window, regardless of what is selected. You can choose whether or not to print the row and column labels and the grid lines. The default is to print labels and grid lines.

To print Notebook data:

1. Choose the **Print...** command from the File menu. DELTAGRAPH displays a "Print" dialog.
2. Click in the check boxes to turn Grid Labels and Grid Lines on or off, then click OK.

All of the data in the active Notebook Page is printed.

Chapter 9 DeltaGraph Menus and Commands

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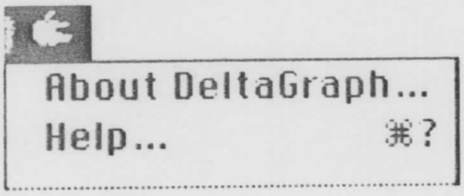
9 DeltaGraph Menus and Commands

This chapter contains a complete description of each DeltaGraph menu, command, and dialog, in the order in which it appears under the Menu bar.

Many DeltaGraph commands have Command-key equivalents to save you time. These appear next to the corresponding command name in this chapter. See Appendix A for an alphabetical listing of all the Command-key shortcuts available in DeltaGraph.

Apple menu



Displays the DeltaGraph About box

Displays the Help dialog, from which you can locate information about DeltaGraph menus and commands

About DeltaGraph...

This command displays the DeltaGraph About box and information about the authors: click anywhere in the About box to display the author information. Click again to close the message.

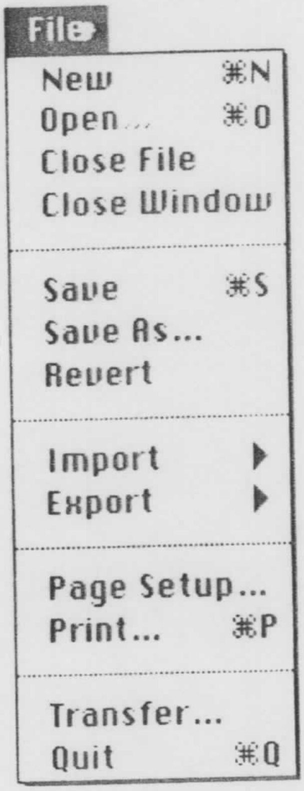
Help... ⌘ /

Invoking the **Help...** command displays the initial DeltaGraph "Help" dialog. From here you can choose a topic, such as one of the DeltaGraph menus, and display increasingly detailed information about that topic.

Context-sensitive Help is also available. Simply hold down the Command key while choosing from a menu (even if the command is dimmed), or clicking on an icon or dialog.

See "Getting Help" in Chapter 2 for more information on the Help system.

File menu



Creates a new document

Displays the Open… dialog so you can open any DeltaGraph document

Closes the document without quitting DeltaGraph

Closes the active window

Saves the current document

Displays the Save As… dialog so you can rename the Notebook or move it

Reverts to the last saved version of the document

Displays a hierarchical menu so you can choose a data or graphic format to import

Displays a hierarchical menu so you can choose a data or graphic format to export

Displays the Page Setup… dialog so you can choose page options

Displays the Print… dialog so you can specify printing options

Quits DeltaGraph and allows you to transfer to another application

Quits DeltaGraph and returns you to the Finder

New ⌘N

The New command creates a new document. If a document is open, you must choose the Close File command before the New command is available. You can have only one document open at a time. (But you can have up to 30 Chart windows open per document, depending on available memory.)

Open… ⌘O

The Open… command displays the standard Macintosh dialog for opening a document. This dialog displays the DeltaGraph documents in the current folder, if there are any. Scroll through the dialog window and select the document you want; then press Return, click on the Open button, or double-click on the document name. The Notebook window appears on your screen, with the most recently selected data highlighted.

To see the names of any accompanying charts, choose the Windows command from the Window menu.

If another document is open, you must choose the Close File command before the Open... command is available.

Close File

This command closes the current document without quitting DELTAGRAPH. If you have made changes and not saved your document, a dialog appears asking if you want to save the changes. You have three choices:

- Yes (saves the document, or displays the "Save As" dialog so you can name an untitled document)
- No (closes the document without saving the most recent changes)
- Cancel (returns you to your DELTAGRAPH document)

Close Window ⌘ W

This command closes the active Chart window or Notebook window. If the active window is the Notebook window, this command closes the current document. If you have made changes and not saved your document, the dialog described in the Close File command appears.

Save ⌘ S

The Save command saves the document named in the Title bar of the Notebook. If the Notebook is untitled, the Save command displays the "Save As" dialog.

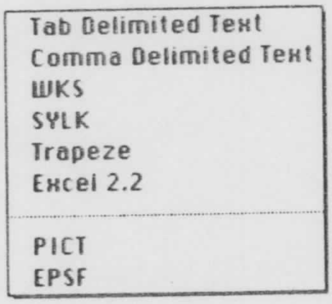
Save As...

The Save As... command displays the standard Macintosh "Save As" dialog. Enter the name you want to give your document, check to be sure the correct drive and folder are selected, and click on the Save button. You can use up to 31 characters in the document name.

Revert

Choose the Revert command to return to the last saved version of the document. Revert cannot be undone.

Import



The Import command lets you import data and graphics into DELTAGRAPH from other applications. You can import data when the Notebook window is active. You can import graphics when the Chart window is active.

The Import command displays a hierarchical menu containing a list of file formats from which you can choose. When you choose one, the "Open" dialog appears, displaying the names of files in the current folder.

Importing data

When the Notebook window is active, you can choose from these data formats:

- Tab-Delimited Text (ASCII file, each field separated by a tab)
- Comma-Delimited Text (ASCII file, each field separated by a comma)
- WKS (from Lotus 123 compatible files)
- SYLK (from Symbolic Link file format)
- Trapeze (from DeltaPoint's Trapeze files)
- Excel 2.2 (Microsoft Excel 2.2 files)

Imported data is placed in column 1 of the active Notebook page, overwriting the entire page and, therefore, any existing data. You can create a new Notebook page to receive data, or you can write over data you no longer need.

See "Importing data" in Chapter 3 for more information.

Importing graphics

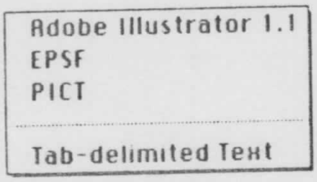
When the Chart window is active, you can choose from these graphic formats:

- PICT (Standard Macintosh interchange format for bit-mapped and object-oriented graphics)
- EPSF (Encapsulated PostScript File)

When you choose a graphic file, the "Open" dialog appears. Select the file you want and double-click, or click on the Open button. The graphic appears in the upper left-hand corner of the active Chart window and can be moved anywhere within the window when it is selected.

See "Importing graphics" in Chapter 7 for more information.

port



The Export command allows you to use DeltaGraph data and charts in other applications by saving them in one of several standard file formats. You can export data when the Notebook window is active. You can export selected graphics when the Chart window is active.

The Export command displays a hierarchical menu containing a list of formats from which you can choose.

Exporting data

You can export data only in Tab-delimited text format, where each field is separated by a tab. All data on the active Notebook page is exported.

See "Exporting data" in Chapter 3 for more information.

Exporting graphics

When a Chart window is active, you can choose from these graphic formats:

- Adobe Illustrator 1.1
- EPSF (Encapsulated PostScript File)
- PICT (Standard Macintosh interchange format for bit-mapped and object-oriented graphics)

When you choose a format, the standard Macintosh "Save As" dialog appears. Enter the name you want to give your document, check to be sure the correct drive and folder are selected, then click on the Save button.

Notice that DELTAGRAPH supplies default names for graphic files, depending on the file format you choose. (Table 9-1, below, gives an example of each, with "n" standing for the number of the Chart window.) You can overwrite the default name by entering a name of your own choosing.

TABLE 9-1. DEFAULT NAMES FOR DELTAGRAPH'S CHART WINDOWS

Format	Default Name
Adobe Illustrator 1.1	Chart Window #n.ill
EPSF	Chart Window #n.eps
PICT	Chart Window #n.pict

Note: For Adobe Illustrator and EPSF formats, the maximum size you can export is 12 x 12 inches. There is no limit to the size of a PICT image that you can export.

See "Exporting graphics" in Chapter 7 for more information.

Page Setup...

The Page Setup... command is available from the Notebook and Chart windows.

The dialog you see depends on the printer attached to your system, and on the installed version of system software.

Consult your printer manual for a description of Page Setup options.

Refer to Chapter 8, "Printing Charts," for more information.

Print... ⌘ P

The Print... command displays the "Print" dialog. You can print from both the Data Notebook and from Chart windows. Make sure your printer has paper in it, and that it's turned on and ready. Select the options you want, then click OK.

Consult your printer manual for complete information about the options in this dialog.

Refer to Chapter 8, "Printing Charts," for more information.

Transfer...

The Transfer... command lets you quit DeltaGraph and open another application without returning to the Finder.

When you choose this command, DeltaGraph displays a dialog that lets you select the name of the application you want to open. The dialog also asks if you want to return to DeltaGraph after quitting the application.

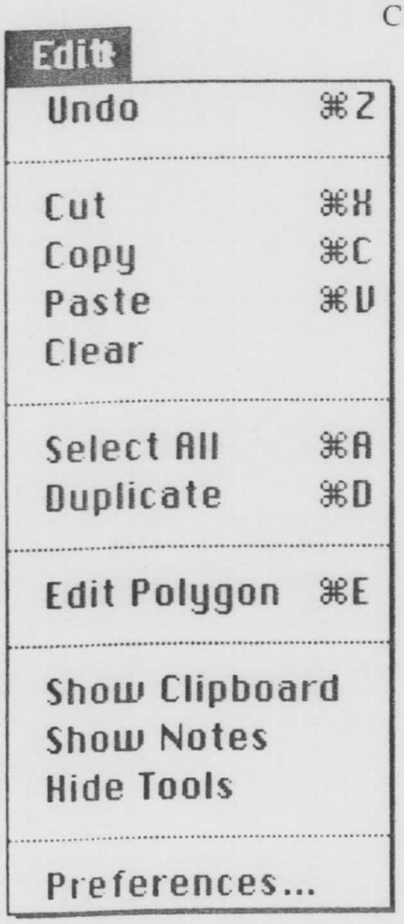
If you have made changes to your document and have not yet saved it, DeltaGraph displays a dialog asking if you want to save your changes. This dialog is described under the Close File command.

Quit ⌘Q

The Quit command exits DeltaGraph and returns you to the Finder. If you have made changes and not saved your document, a dialog appears asking if you want to save the changes. This dialog is described under the Close File command.

Edit menu

Use the Edit menu to edit in the Notebook and Chart windows, and to show the Clipboard, the Notes window, and the "Preferences" dialog.



Undoes the last operation; cannot undo Revert

Removes selected data or object from window and places it in Clipboard

Places a copy of selected data or object in Clipboard

Pastes contents of Clipboard to active Notebook window or Chart window

Removes selected data or object(s) from window, without saving to Clipboard

Selects all data in Notebook window or all objects in Chart window

Makes a copy of selected object and places near original object in Chart window

Cycles through five commands, depending on selected object, and lets you edit a polygon, arc, rounded rectangle, Bezier curve, or arrow

Displays the contents of the Clipboard in the Clipboard window

Opens the Notes window

Hides or Shows the Drawing palette in the Chart window

Opens the Preferences dialog

Undo ⌘Z

This command undoes the last operation. The command varies depending on the last action you performed. When you cannot undo an action this command changes to Can't Undo and is dimmed.

In the Notebook window, you can undo actions performed with the Delete, Cut, and Paste commands.

In the Chart window, you can undo all changes to drawing objects, such as moving, resizing, and deleting. You can also undo all changes made with the Drawing palette, and all changes made with dialogs.

You cannot undo the Revert command.

Cut ⌘X

The Cut command deletes the selected data from the Notebook page, or the selected object from the Chart window, and puts the contents in the Clipboard.

Copy ⌘C

The Copy command creates a copy of the selected data or graphic element and places it in the Clipboard.

Paste ⌘V

The Paste command copies the contents of the Clipboard to the active window.

In the Notebook window, data is pasted beginning with the currently selected cell, and moving to the right and downward. Any data already there is replaced.

In the Chart window, an object is pasted in the upper left-hand corner of the window. It can be moved anywhere within the Chart window when it is selected.

Clear

The Clear command removes the selected block(s) of data or graphic drawing element(s) from the active window. It does *not* place a copy in the Clipboard.

Select All ⌘A

Select All selects all data or objects in the active window.

In the Notebook window, Select All selects all data down to the lowest right-hand cell containing data. This is the same as clicking on the Select All icon in the upper left-hand cell of the Notebook window.

Duplicate ⌘D

Duplicate works with drawing and text objects only; it copies the selected object(s) in the Chart window. The copy is placed near the original and can be moved anywhere within the window.

Edit Polygon ⌘E

The Edit Polygon command allows you to change line segments in a polygon. You must select a polygon to make this command available. See "Editing a polygon" in Chapter 6 for instructions.

Note that this command changes depending on the drawing object selected. The keyboard shortcut, ⌘–E, remains the same.

Edit Bezier Curve ⌘E

The Edit Bezier Curve command allows you to change the curvature of segments in a Bezier curve. You must select a Bezier curve to make this command available. See "Editing a Bezier curve" in Chapter 6 for instructions.

Note that this command changes depending on the drawing object selected. The keyboard shortcut, ⌘–E, remains the same.

Edit Arc ⌘E

The Edit Arc command allows you to change the curvature of an arc. You must select an arc to make this command available. See "Editing an arc" in Chapter 6 for instructions.

Note that this command changes depending on the drawing object selected. The keyboard shortcut, ⌘–E, remains the same.

Edit Round Corners ⌘E

The Edit Round Corners command allows you to change the curvature of corners on a rounded rectangle. You must select a rounded rectangle to make this command available. See "Editing a rounded rectangle" in Chapter 6 for instructions.

Note that this command changes depending on the drawing object selected. The keyboard shortcut, ⌘–E, remains the same.

Edit Arrow ⌘E

The Edit Arrow command allows you to change the arrows on a line. You must select a line with arrows to make this command available. See "Editing an arrow" in Chapter 6 for instructions.

Note that this command changes depending on the drawing object selected. The keyboard shortcut, ⌘–E, remains the same.

Show Clipboard

This command displays the contents of the Clipboard in the Clipboard window. You can move, size, and close this window just as you would any other window.

This command changes to Hide Clipboard in the menu listing when the Clipboard is open.

Show Notes

Show Notes displays the Notes window associated with the current document. You can enter text in the Notes window to record information or comments about the charts and data stored in the document.

See "Notes window" later in this chapter for more information.

Hide Tools

The Hide Tools command removes the Drawing palette from the Chart window.

This command changes to Show Tools when the Drawing palette is not visible in the Chart window.

Preferences...

The Preferences... command displays a dialog that allows you to set default options for window positions, the number of pages in a document, and the text attributes of text objects and chart labels in the Chart window.

The entries in the dialogs for setting text characteristics are described in the Text menu section of this chapter. The entries under "Windows" are described under the Position command in the Windows menu section. The dialog for setting the number of pages is described under the Number of Pages... command in the Windows menu section.

You can also use the Preferences… command to set a monochrome monitor to display patterns instead of colors. This is useful when a chart is made in color on one system, then displayed on a monochrome monitor. Use this option to display colors such as dark red and dark blue as gray patterns instead of as solid black.

Text menu

Use the Text menu to perform operations on text in the Notebook, Chart, and Notes windows. The default in the Notebook window is 10-point Geneva, plain black. The default in the Chart window is 12-point Geneva, plain black.

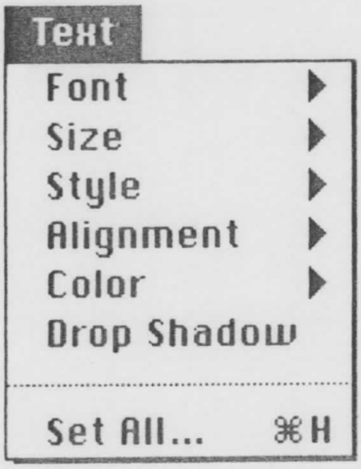
You cannot format text individually in the Notebook window; formatting changes affect all text in the window. Use the Set All... command in the Text menu to change the text attributes for the Notebook window.

When used in the Chart window, the Set All... command affects selected text only.

You can use the Preferences... command in the Edit menu to change the default text attributes for text objects and chart labels in the Chart window.

The Drop Shadow command applies to selected text in the Chart window only.

For detailed instructions on working with text in the Notebook window, see "Editing text" in Chapter 5. For detailed instructions on working with text in the Chart window, see "Adding text" in Chapter 6.



Displays a hierarchical menu from which you can choose a text font

Displays a hierarchical menu from which you can choose a font size

Displays a hierarchical menu from which you can choose a text style

Displays a hierarchical menu from which you can choose text alignment

Displays a color palette from which you can choose a text color or make your own color

Places a drop shadow behind each character of a selected text object

Displays a dialog so you can define all text attributes at the same time

Font

The Font command displays a hierarchical menu showing the fonts that are currently installed in your Macintosh system file. Select the text you want to change, then choose the Font command from the Text menu and select the font of your choice. The selected text changes accordingly.

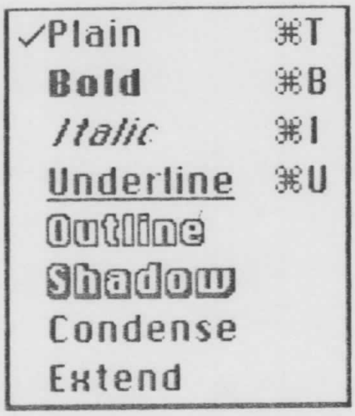
Size

The Size command displays a hierarchical menu showing font sizes from which you can choose. Select the text, then choose the Size command and select the size of your choice. The selected text changes accordingly.

To create a custom size, choose "Other..." from the bottom of the list. The "New Font Size" dialog appears. Valid font sizes range from 3 to 127 points. Scroll through or enter the number of the size you want. Then click OK, or click Cancel to exit the dialog without changing the font size.

Style

The Style command displays a hierarchical menu showing a list of font styles from which you can choose. Select the text, then choose the Style command and select a style. The available styles and keyboard equivalents are:



• Plain	⌘-T
• Bold	⌘-B
• Italic	⌘-I
• Underline	⌘-U
• Outline	
• Shadow	
• Condense	
• Extend	

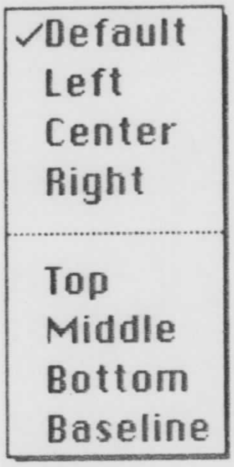
Experiment with these styles to see the different effects.

Alignment

The Alignment command displays a hierarchical menu showing four alignment options for text. Select the text, then choose the Alignment command and select the option you want.

Some alignment options are applicable only to particular types of text, such as text in the Notebook or Notes windows, or text in Chart labels. The Top, Middle, Bottom, and Baseline options apply to text in Table charts only.

The options are:



- Default (the default alignment of the selected text is usually left justified)
- Left (aligns selected text vertically against a left margin)
- Center (aligns selected text under a central point)
- Right (aligns selected text vertically against a right margin)
- Top (aligns selected text at the top of the cell)
- Middle (aligns selected text in the middle of the cell)
- Bottom (aligns selected text at the bottom of the cell)
- Baseline (aligns selected text with the baseline of the row label)

Color

The Color command displays a palette of colors from which you can choose. Select the text, then choose the Color command and select the color you want. The selected text changes accordingly. You can also use the Custom... option to define your own colors.

If you are using a black-and-white monitor, the color palette shows a list of colors followed by patterns that show the relative lightness or darkness of the color as it will appear on a color monitor or printer.

To create your own color, select the text you want to modify, then choose the Custom... option in the Color command. See "Using custom colors" in Chapter 5 for detailed instructions.

Drop Shadow

This command lets you place a drop shadow behind each character of selected text in a Chart window. Select the text, then choose the Drop Shadow command from the Text menu. The shadows appear behind the text. Choose the Drop Shadow command again to remove the shadow.

Note: A drop shadow applies to all the characters in a text object. You cannot shadow individual characters in a text object.

Set All... ⌘H

The Set All... command allows you to set all the text attributes in a Notebook or Chart window at the same time.

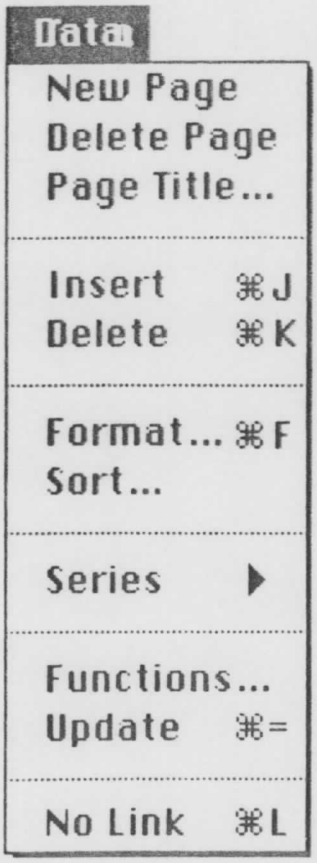
In the Notebook window, Set All... affects the entire Notebook page. You cannot change portions of text in a Notebook page.

In the Chart window, this command affects selected text only. You can use the Preferences... command in the Edit menu to change the default text attributes for text objects and chart elements.

Data menu

Use the Data menu to perform operations in the Notebook window. The Format... command also applies to chart labels in the Chart window.

See Chapter 2, "DELTAGRAPH Concepts," for general information about the Notebook window.



Creates a new Notebook page for data

Deletes the current Notebook page

Displays a dialog so you can name the current Notebook page

Lets you insert empty rows or columns, depending on what is selected, on a Notebook page

Lets you delete rows or columns, depending on what is selected, from a Notebook page

Displays a dialog that lets you choose an appropriate format for selected data

Displays a dialog that lets you specify three levels of sorts for selected data

Displays a hierarchical menu that lets you plot the data series from the columns or from the rows

Displays a dialog that lets you perform calculations on selected columns of data

Updates the chart after changing data in the Notebook window

Changes to Link... when Excel 2.2 data is in Clipboard to allow you to load data directly from Excel 2.2

New Page

New Page displays a new Notebook page for you to work on. Use the Page icon pop-up menu on the left side of the Notebook window to select a Notebook page. The number of available Notebook pages depends upon the amount of available memory.

A Notebook page accommodates up to 9999 rows and 256 columns of data.

See "About the Notebook icons" in Chapter 2 and "Creating a new page" in Chapter 3 for more information.

Delete Page

The Delete Page command removes the active Notebook page from the Notebook.

Page Title...

The Page Title... command displays a dialog that allows you to name the current Notebook page.

DeltaGraph automatically gives Notebook pages the default names "Page 1," "Page 2," "Page 3," and so forth, unless you use this command to give them names of your own choosing.

See "Naming a Notebook page" in Chapter 3 for more information.

Insert Row
⌘ J

The Insert Row command inserts an empty row above a selected row. If you select more than one row, DeltaGraph inserts the same number of empty rows. For example, if you select four rows, then choose the Insert Row command, DeltaGraph inserts four empty rows above the selected ones.

This command changes from Insert Row to Insert Column, depending on whether a row or column is selected.

Note: To insert or delete rows or columns, you must first select the entire row or column by clicking on the row number or column label.

Insert Column
⌘ J

The Insert Column command inserts an empty column to the left of a selected column. If you select more than one column, DeltaGraph inserts the same number of empty columns. For example, if you select four columns, then choose the Insert Column command, DeltaGraph inserts four empty columns to the left of the selected ones.

This command changes from Insert Column to Insert Row, depending on whether a column or row is selected.

Note: To insert or delete rows or columns, you must first select the entire row or column by clicking on the row number or column label.

Delete Row ⌘K

The Delete Row command deletes selected rows. Existing data moves up into the deleted row(s).

This command changes from Delete Row to Delete Column, depending on whether a row or column is selected.

Note: To insert or delete rows or columns, you must first select the entire row or column by clicking on the row number or column label.

Delete Column ⌘K

The Delete Column command deletes selected columns. Adjacent data moves from the right into the deleted column(s).

This command changes from Delete Row to Delete Column, depending on whether a row or column is selected.

Note: To insert or delete rows or columns, you must first select the entire row or column by clicking on the row number or column label.

Format... ⌘F

The Format... command displays the "Set Format" dialog that allows you to specify formats for numbers, times, and dates.

See "Changing the data format" in Chapter 3 for detailed instructions on using this dialog.

Sort...

The Sort... command displays a dialog that allows you to sort selected columns of alphabetical or numeric data in ascending or descending order. You can specify a secondary and tertiary sort within the main sort.

See "Sorting data" in Chapter 3 for detailed instructions on using this dialog.

Series

The Series command displays a hierarchical menu that allows you to plot your data series based on the columns, which is the default setting, or based on the rows.

When you choose "In Rows" from this menu, the column labels appear along the category axis instead of in the legend or along the series axis, and the row labels appear in the legend or along the series axis, instead of along the category axis. Each data series is plotted from a row instead of from a column.

To help you identify these DELTAGRAPH chart elements, see the diagrams for two- and three-dimensional charts in Chapter 2, "DELTAGRAPH Concepts."

Functions...

The Functions... command displays a dialog that allows you to choose data calculation functions. You can use these functions to perform mathematical and statistical operations on selected columns of data. You can also generate columns of numbers, times, and dates, within parameters you specify.

For complete details on the Functions... command, see "Using functions" in Chapter 3.

Update ⌘ =

Use Update after you have modified your data so that any charts associated with the active Notebook window are updated to reflect current data.

No Link ⌘ L

The No Link command is always dimmed. It indicates that there is no data from Excel 2.2 in the Clipboard.

Whenever there is data from Excel 2.2 in the Clipboard, this entry changes to Link, to show that the linking option is available.

When you use the Link command to create a link, the entry changes to Unlink, to allow you to deactivate the link between the Excel 2.2 document and the current Notebook page.

Link ⌘L

The Link command becomes available when you copy or paste data from an Excel 2.2 file into the Clipboard.

Use the Link command to automatically load data from an Excel 2.2 document into a page in the Notebook window. You can create only one link per Notebook page.

Choose Link... to paste the data into the active Notebook page and create a link to the Excel document. The linked data is placed in the upper left-hand corner of the Notebook page, overwriting any existing data.

If the data in the linked Excel document is modified in Excel and saved, the next time the DeltaGraph document is opened, the data in the linked Notebook page is updated to reflect the changes.

The Link command changes to Unlink whenever the current Notebook page contains a link to an Excel document, so you can deactivate the existing link.

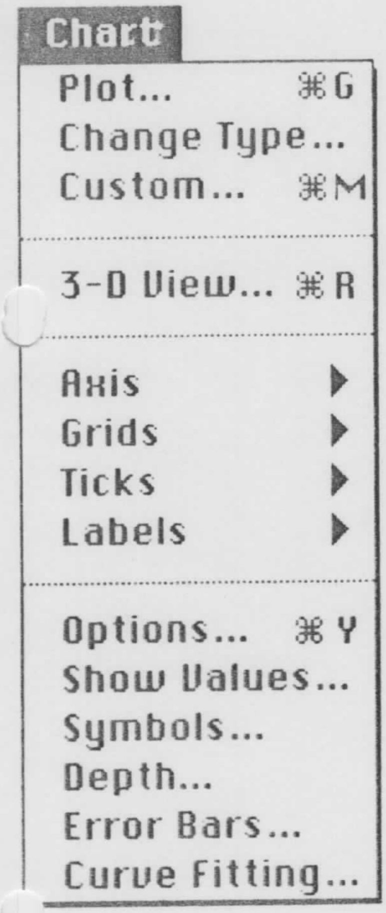
Note: The DeltaGraph Utilities disk includes an Excel 2.2 macro program called "DeltaGraphMacro" that you can load into Excel and run. This macro automatically takes selected data in the current Excel worksheet and copies it to the Clipboard. If you are using MultiFinder™, the macro also opens DeltaGraph, or, if already open, switches to DeltaGraph and makes the Link... command available.

Unlink

The Unlink command deactivates the link between an Excel document and a Notebook page. The data remains in the Notebook, but it will no longer be updated as the Excel data is changed.

Chart menu

Use the Chart menu to perform operations in the Chart window.



Displays a dialog so you can choose the chart type and Chart window for selected data

Displays a dialog so you can change the chart type of the currently selected chart

Displays a dialog so you can create your own custom charts

Displays a dialog so you can adjust the perspective on 3-D charts

Displays a hierarchical menu so you can choose a chart axis, then adjust its parameters and add an axis title

Displays a hierarchical menu so you can choose a chart axis, then turn the grids on and off

Displays a hierarchical menu so you can choose a chart axis, then adjust tick marks

Displays a hierarchical menu so you can choose a chart axis, then adjust its labels

Displays a dialog of chart options that varies depending on the chart type

Displays a dialog so you can place data values on the chart

Displays a dialog so you can choose symbol characters for charts that use data symbols

Displays a dialog so you can add depth to a two-dimensional chart

Allows you to place error bars on the chart to show standard deviation and percentage of difference

Allows you to average the points on a line to show a more gradual curve

Plot... ⌘G

The Plot... command displays a dialog from which you can choose the chart type and window for the currently selected data.

To see the standard and three-dimensional chart types, choose "Standard" or "3-D," then click on "Column," which is the first entry in each list. This displays a complete selection of the DELTAGRAPH chart types.

To see the names of any custom charts that you or others have made, choose "Custom," then click on the first entry in the list to display the pop-up menu of names. Select the chart type you want, then release the mouse button. The new chart type appears next to "Standard," "3-D," or "Custom" in the dialog.

You can choose from these Standard chart types:

- Column
- Stacked Column
- Bar
- Stacked Bar
- Line
- Pie
- Stacked Pie
- Area
- Scatter
- Step
- Table
- High-Low
- Range
- Contour
- Polar

You can choose from these 3-D chart types:

- 3-D Column
- 3-D Area
- 3-D Ribbon
- 3-D Surface
- 3-D Scatter
- 3-D Scatter Line
- 3-D Wire Frame

You can also choose from any custom charts that you or others have made.

Click on the Plot button to create the new graph, which DeltaGraph displays in a new window, unless you choose to place it in an existing Chart window.

Refer to Chapter 4, "Plotting Data," for detailed instructions on creating a chart, and an example of each DeltaGraph chart type.

Change Type...

The Change Type... command allows you to change the chart type of a selected chart, without re-selecting the data. This command displays the "Choose Chart Type" dialog, which you use the same way as the dialog from the Plot... command. You cannot, however, choose a different Chart window with this command.

See "Changing the chart type" in Chapter 4 for complete instructions on using this command.

Custom... ⌘M

The Custom... command displays the "Custom Chart Types" dialog that allows you to name and save chart formats you like. All the formatting for a given chart is stored under the specified name in the document named "DeltaGraph Library."

This dialog also lets you rename and delete custom charts in the DeltaGraph Library document.

See "Making a custom chart" in Chapter 4 for complete instructions on using this command.

3-D View...⌘R

The 3-D View... command displays a dialog that allows you to change the orientation, perspective, and vanishing point on a three-dimensional chart.

For complete instructions on using this dialog, see "Working with 3-D View" in Chapter 5.

Axis

The Axis command displays a hierarchical menu that lets you choose an axis, then change the axis scale and other associated parameters.

Two-dimensional charts have value and category axes. Three-dimensional charts have value, category, and series axes.

You can drag the Title bar to move the axis dialogs away from your viewing area. You can click the Show button to preview the results of your choices without exiting the dialog.

See "Changing axes" in Chapter 5 for complete instructions.

Grids

The Grids command displays a hierarchical menu that lets you turn major and minor grids on and off for each axis in the chart. Two-dimensional charts have value and category grids. Three-dimensional charts have value, category, and series grids.

You can drag the Title bar to move the grids dialogs away from your viewing area. You can click the Show button to preview the results of your choices without exiting the dialog.

See "Turning chart grids on and off" in Chapter 5 for complete information.

Ticks

The Ticks command displays a hierarchical menu that lets you choose an axis, then change the placement and length of tick marks for that axis. Two-dimensional charts have value and category tick marks. Three-dimensional charts have value, category, and series tick marks.

You can drag the Title bar to move the ticks dialogs away from your viewing area. You can click the Show button to preview the results of your choices without exiting the dialog.

See "Changing Tick Marks" in Chapter 5 for complete instructions.

Labels

The Labels command displays a hierarchical menu that lets you choose an axis, then change the orientation of the labels and title for that axis. Two-dimensional charts have value and category labels. Three-dimensional charts have value, category, and series labels.

You can drag the Title bar to move the labels dialogs away from your viewing area. You can click the Show button to preview the results of your choices without exiting the dialog.

See "Changing labels" in Chapter 5 for complete instructions.

ptions... ⌘Y

The Options... command displays chart options dialogs. The dialogs vary, depending on the chart type that is selected. See "Using options" in Chapter 5 for a description of the chart options and the various dialogs.

Show Values...

The Show Values... command lets you place different types of value labels in several positions on a two-dimensional chart.

Symbols...

The Symbols... command lets you choose a symbol for each data series in Line, Scatter, Step, and 3-D Scatter charts. The "Symbols" dialog shows a default symbol for each data series.

You can choose a symbol character from any font installed in your system file. The default font is named DeltaSymbols.

See "Changing symbols" in Chapter 5 for complete instructions on using this dialog.

Depth...

The Depth... command displays a dialog that lets you add depth to a two-dimensional chart. See "Adding depth to 2-D charts" in Chapter 5 for a description of this dialog.

Error Bars...

The Error Bars... command displays a dialog that allows you to add error bars to your data series in Line, Step, and Scatter charts. Error bar options include: Percentages, Standard Error, Standard Deviation, Fixed Values, and Variables based on data in the Notebook.

See "Using error bars" in Chapter 5 for instructions on using this command.

Curve Fitting...

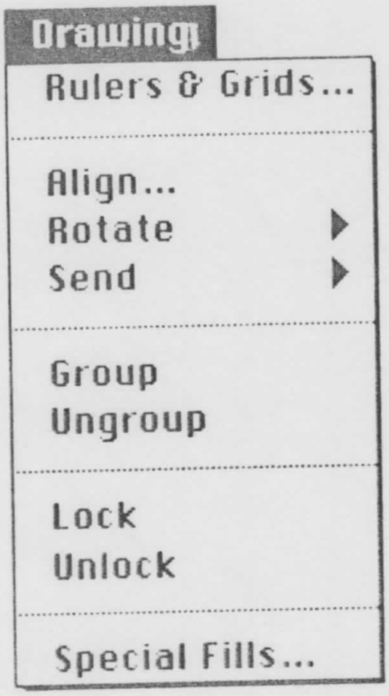
The Curve Fitting... command displays a dialog that lets you add mathematically generated curves to selected series in Line, Step, and Scatter charts. Curve Fitting options include: Linear, Logarithmic, Exponential, Polynomial, and Spline curves.

See "Curve fitting" in Chapter 5 for instructions on using this command.

Drawing menu

Use the Drawing menu to perform operations on selected graphic elements in the Chart window. See Chapter 6, "Drawing in the Chart Window," for detailed information on each of these commands.

See Chapter 2, "DeltaGraph Concepts," for a brief summary of each tool in the Drawing palette.



Displays a dialog that lets you set and show the drawing rulers and grids

Displays a dialog so you can align selected objects

Displays a hierarchical menu so you can rotate and flip selected objects

Displays a hierarchical menu so you can send selected elements up and down layers

Groups selected objects into one unit

Ungroups a selected object into its original components

Locks an object in place so you cannot modify or move it

Unlocks a locked object

Displays a dialog so you can choose special fill patterns and colors

Rulers & Grids...

This command displays the "Rulers & Grids" dialog. Use this dialog to turn rulers on and off, to set different ruler scales, and to set drawing grid options.

To show rulers in the Chart window, click on the Show Rulers check box; click again to make the rulers disappear. You can choose from the following measurement options for your rulers:

- Inches (the default setting)
- Centimeters
- Points (1/72 of an inch)
- Picas (12 points, or 1/6 of an inch)

The Grid Settings in this dialog apply to the underlying drawing grid in the Chart window, not to the grids in the chart. To show the horizontal and vertical drawing grids, click on the "Show Grid" check boxes. The range of available settings varies with the unit of measurement you choose.

To disable "Snap to Grid," which automatically aligns charts and drawing objects with the grids, click on the check boxes.

Note: Rulers & Grids settings apply to the active Chart window. You can specify unique settings for each Chart window in your Notebook.

See "Changing ruler settings" in Chapter 6 for more detailed information.

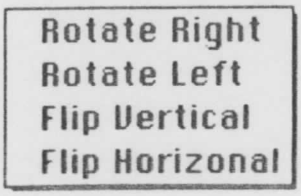
Align...

The Align... command displays a dialog that lets you align selected objects. You can align the edges of selected objects according to their tops, left sides, right sides, or bottoms. You can align the centers of selected objects vertically or horizontally. You can also align selected objects to the drawing grid.

Remember, to select multiple objects, you must press the Shift key while making your selections.

See "Aligning objects" in Chapter 6 for detailed information.

Rotate

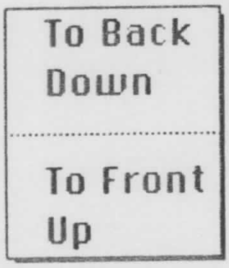


The Rotate command displays a hierarchical menu containing four options that let you rotate a selected object (or objects) to the left or right in 90-degree increments, and flip a selected object horizontally or vertically.

See "Rotating objects" in Chapter 6 for detailed information.

Send

The Send command displays a hierarchical menu containing four options for positioning elements in the Chart window:



- To Back (moves the selected element(s) to the bottom layer)
- Down (moves the selected element(s) down one layer)
- To Front (moves the selected element(s) to the top layer)
- Up (moves the selected element(s) up one layer)

Note: DeltaGraph remembers layers in the same order you created or placed each object. If it appears that an element is not moving, move it again; you might have drawn an object in another part of the chart that is inserting a layer between the objects you're trying to move.

See "Layering objects" in Chapter 6 for complete details.

Group

This command groups selected elements in the Chart window so you can perform operations on the elements as a unit. This is useful if you want to move a group of related items, but do not want to change their current arrangement.

To group elements, select the ones you want to group, then choose the Group command. The elements are now treated as one element.

See "Grouping and ungrouping objects" in Chapter 6 for details.

Ungroup

This command ungroups a selected element or elements, but only works on items previously grouped with the Group command.

See "Grouping and ungrouping objects" in Chapter 6 for details.

Lock

The Lock command locks a selected object in the Chart window so you cannot move or modify it. You can lock more than one object.

Unlock

The unlock command unlocks a selected object in the Chart window so you can move or modify it.

Special Fills...

This command displays the "Special Object Fills" dialog. You can choose one of these types:

- Patterned
- Color

You can choose one of these directions:

- Horizontal
- Vertical
- Radial

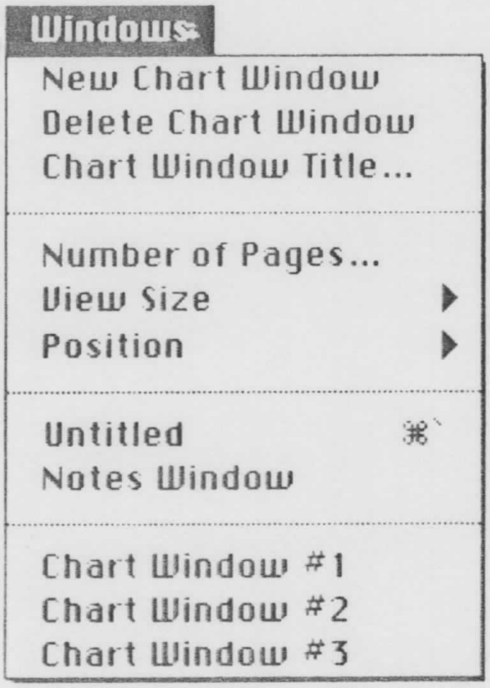
To activate your choices, click on the "Use Special Fill" check box. Experiment with the different variations. You can create some remarkable color and pattern effects. See "Using special fills" in Chapter 5 for detailed information.

Windows menu

The Windows menu is almost exclusively for the Chart windows in your document. Use this menu to add, delete, name, and display Chart windows. Use it also to change the size of a chart on the screen, and the number of pages in the drawing surface.

You can also choose the Notebook and Notes windows from this menu.

Note that you must use commands in the Data menu to create, delete, and name Notebook pages. You must use the Page icon on the left side of the Notebook window to display other Notebook pages you have created.



Creates a new Chart window

Deletes the current Chart window and returns to the Notebook

Displays a dialog so you can name the current Chart window

Displays a dialog so you can specify the number of pages in the current Chart window

Displays a hierarchical menu that lets you scale the Chart window on the screen

Displays a hierarchical menu that lets you tile, stack, or place windows side by side

This menu command contains the document name. If the document is not yet named, this entry says "Untitled." When you choose the document name, DeltaGraph displays the Notebook window.

Displays the Notes window

Displays the named Chart window: these are the default names for the first three Chart windows in a document

New Chart Window

The New Chart Window command creates a new Chart window. DeltaGraph automatically names each window "Chart Window #1," "Chart Window #2," and so forth. You can use the Chart Window Title... command to give your charts more meaningful titles.

New Chart windows are created by default when you plot data, unless you specify otherwise. See Chapter 4, "Plotting Data," for detailed information.

The Chart windows currently associated with your document are listed at the bottom of the Windows menu.

You can have up to 30 Chart windows in each DELTAGRAPH document, depending on available memory. When you have used the available memory, the New Chart Window command is dimmed.

See "About the Chart window" in Chapter 2 for general information about Chart windows.

Delete Chart Window

Delete Chart Window deletes the active Chart Window.

The Chart windows currently associated with your document are listed at the bottom of the Windows menu.

See "Deleting a chart" in chapter 5 for more information.

Chart Window Title...

The Chart Window Title... command displays a dialog that lets you name the current Chart window.

DELTAGRAPH automatically gives your Chart windows the default names "Chart Window #1," "Chart Window #2," and so forth, unless you use this command to give them names of your own choosing.

See "Naming a chart window" in Chapter 5 for more information.

Number of Pages...

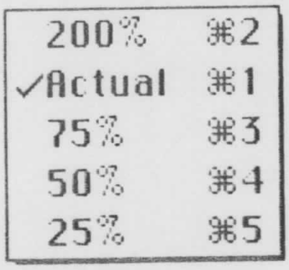
The Number of Pages... command displays a dialog that lets you specify the number of pages to include in the current Chart window. The maximum number of pages is 10 pages by 10 pages. The default number of pages is two. You can use the Preferences... command in the Edit menu to change the default number of pages.

Click or drag in the boxes to indicate the size you want; the dialog changes to indicate the width and length in pages and in inches.

For example, you can drag or click the squares in the dialog until four boxes are selected. Then, you can scroll the active Chart window to see that the four-page area is available. If you fill the four pages, then print, the printout occupies four pages. Empty pages do not print.

View Size

The View Size command displays a hierarchical menu that lets you change the viewing size of the contents in the active Chart window. It does not affect the printed page. The default is 100 percent. The available sizes and their keyboard equivalents are:

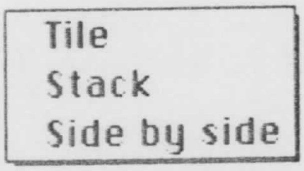


• 200 percent	⌘–2
• Actual (100 percent)	⌘–1
• 75 percent	⌘–3
• 50 percent	⌘–4
• 25 percent	⌘–5

You can go back and forth between view sizes.

Position

The Position command displays a hierarchical menu that lets you tile, stack, or place your Chart windows side by side.



"Tiled" means the Notebook window and any Chart windows are arranged to fit together like tiles on the screen.

"Stacked" means any Chart windows are stacked on the top and the Notebook window is placed underneath them.

"Side by side" means the Notebook window is on the left, and any Chart windows are stacked on the right.

Untitled ⌘'

This command displays the Notebook window. The name of the Notebook window is the same as the name of the document.

If you have not yet saved the document, the default name is "Untitled." Once you have saved the document, its name replaces "Untitled" in the Windows menu.

When you select the document name, DELTAGRAPH displays the Notebook page on which you were last working. The names of the Notebook pages do not appear in this menu. You must use the Page icon in the upper left-hand corner of the Notebook window to select and display a particular Notebook page.

Notes Window

This command displays the Notes window associated with the current document. You can move, size, and close this window just as you would any other window.

You can enter text in the Notes window to record information or comments about the charts and data stored in the document. The Notes window is saved automatically when you save the document and can be opened whenever the document is open.

Use the Text menu to change the font, size, style, alignment, and color of selected text within the Notes window. Drag the margin icons to change the margin settings.

To print the contents of the Notes window, select it, then choose the Print... command from the File menu.

Chart Window #1

The Windows command displays the list of windows associated with the current document. The entries at the bottom of the menu ("Chart Window #1," "Chart Window #2, and "Chart Window #3") are the default names that DELTAGRAPH assigns to charts you have made. If you have named your chart with the Chart Window Title... command, the name appears here.

To make one of the windows active, simply select its name from the Windows menu.

Appendix A

DeltaGraph Command Keys

This appendix lists all of the DeltaGraph command key combinations for choosing menu commands. It also lists key combinations for selecting discontinuous data in the Notebook window, multiple chart elements in the Chart window, and some keys to use when drawing or moving objects in the Chart window.

Command	**Key Combination**
Bold text	⌘–B
Cancel operation	⌘–.
Close Window	⌘–W
Constrains object handles to a square when drawing in the Chart window	Shift–Drag
Constrains object to initial direction of movement when drawing an object or resizing an axis in the Chart window.	⌘–Drag
Copy	⌘–C
Custom...	⌘–M
Cut	⌘–X
Delete	⌘–K
Duplicate	⌘–D
Edit Arc	⌘–E
Edit Arrow	⌘–E
Edit Bezier Curve	⌘–E

Command	Key Combination
Edit Polygon	⌘–E
Edit Round Corners	⌘–E
Format...	⌘–F
Go to Notebook	⌘–'
Help...	⌘–/
Insert	⌘–J
Italic text	⌘–I
Link	⌘–L
New	⌘–N
Open...	⌘–O
Options...	⌘–Y
Paste	⌘–V
Plain text	⌘–T
Plot...	⌘–G
Print...	⌘–P
Quit	⌘–Q
Save	⌘–S
Select All	⌘–A
Select discontinuous data in the Notebook window	⌘–Click
Select multiple *chart* elements in the Chart Window	⌘–Click
Set All...	⌘–H
3-D View...	⌘–R

Command	Key Combination
Temporarily turns off "Snap to Grid" when drawing or moving objects in the Chart window.	Option–Drag
Underline text	⌘–U
Undo	⌘–Z
Update	⌘–=
View Size Actual	⌘–1
View Size 200%	⌘–2
View Size 75%	⌘–3
View Size 50%	⌘–4
View Size 25%	⌘–5
In dialogs, makes the selected change(s), but does not redraw the chart until you click OK.	⌘–Shift–OK
Displays a Notebook page and untitled document, instead of the document "DG Stationery," when creating a new file from within DELTAGRAPH. Applies only if "DG Stationery" is in the DELTAGRAPH folder.	Option–New
Opens a new Notebook page and untitled document, instead of the document "DG Stationery," when opening DELTAGRAPH from the Finder. Applies only if "DG Stationery" is in the DELTAGRAPH folder.	⌘–Open
Opens DELTAGRAPH and displays the "Open" dialog instead of a new Notebook page and untitled document.	Shift–Open

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DeltaPoint™

DeltaPoint, Inc. 200 Heritage Harbor, Suite G
Monterey, CA 93940 (408) 648-4000
(800) 367-4334 FAX: (408) 648-4020